THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

Vol. 32, No. 2 | 430 N. Michigan Ave., Chicago, Ill. | October, 1932

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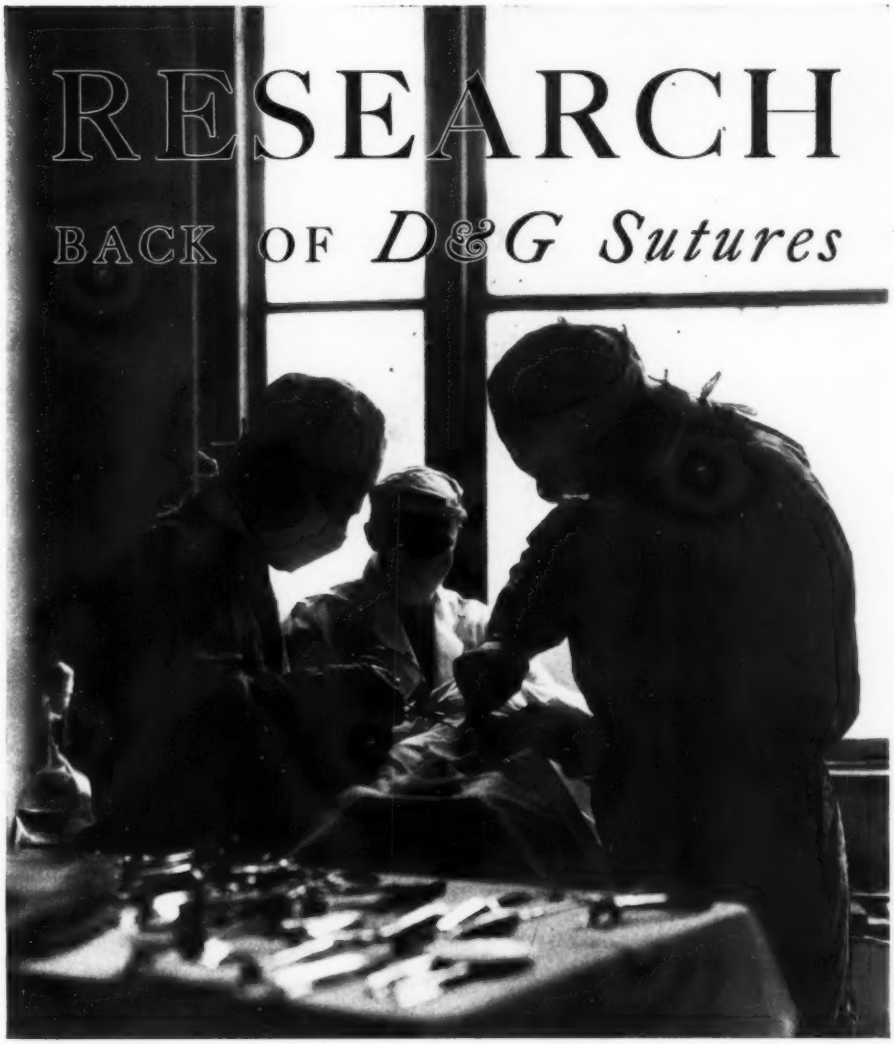

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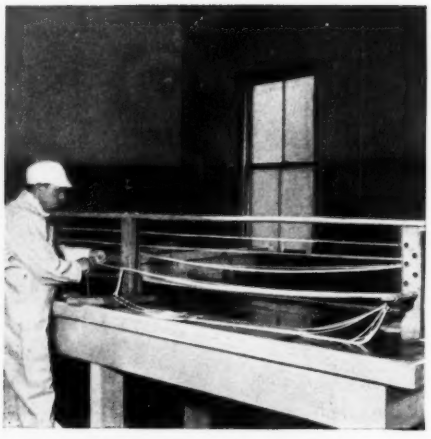

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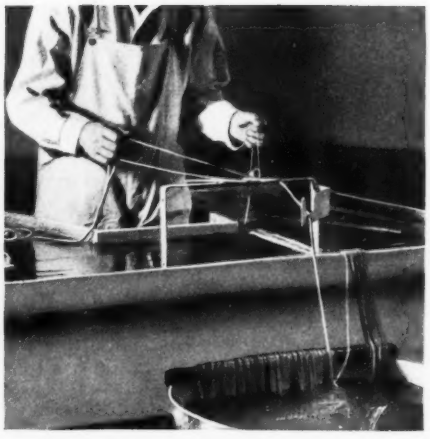

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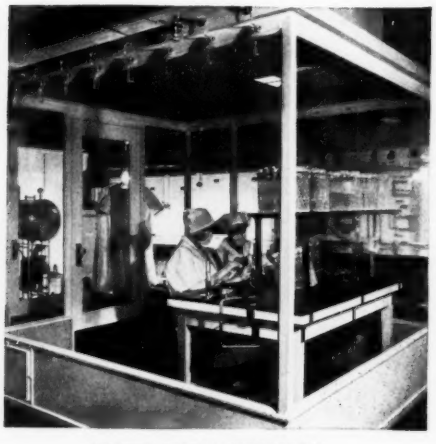

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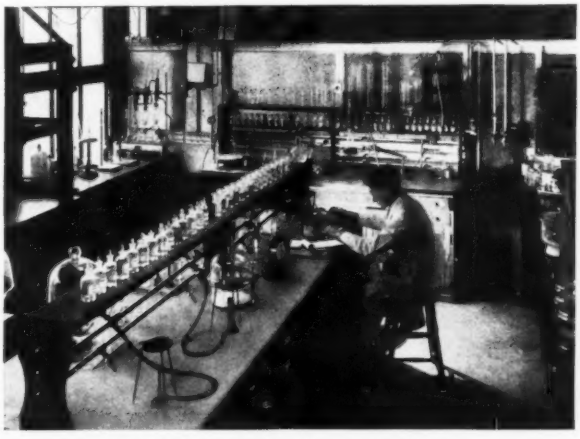

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> ***N. Y. State Journal of Medicine*, September 15, 1931.**

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FOR THE NERVOUS CHILD

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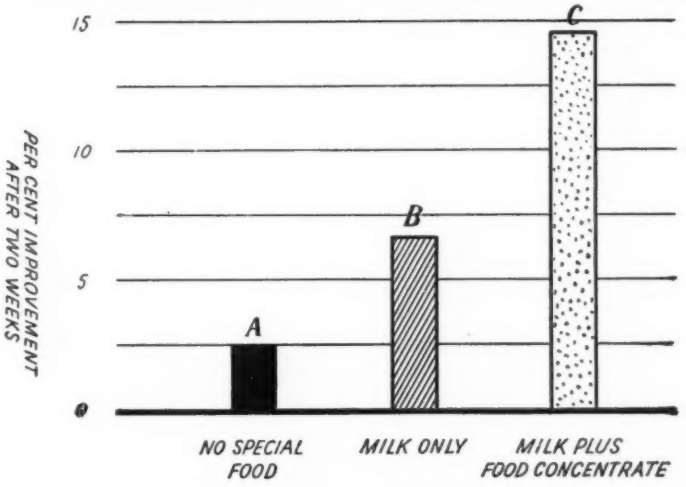

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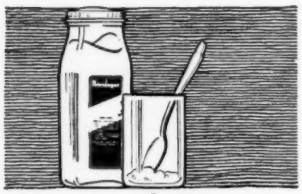
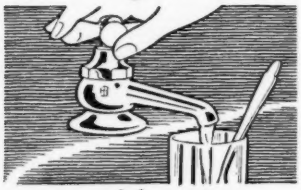
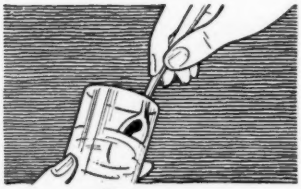

1— in glass . .


2— add water . .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*Joseph B. DeLee, M.D., "The Principles and Practice of Obstetrics," W. B. Saunders Co.

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The amount of aluminum found in the livers ranged from 0.17 mg. to 1.17 mg. per 100 g. of autopsy material. In the kidneys, the aluminum content found was from 0.13 mg. to 0.87 mg. per 100 g. of material.

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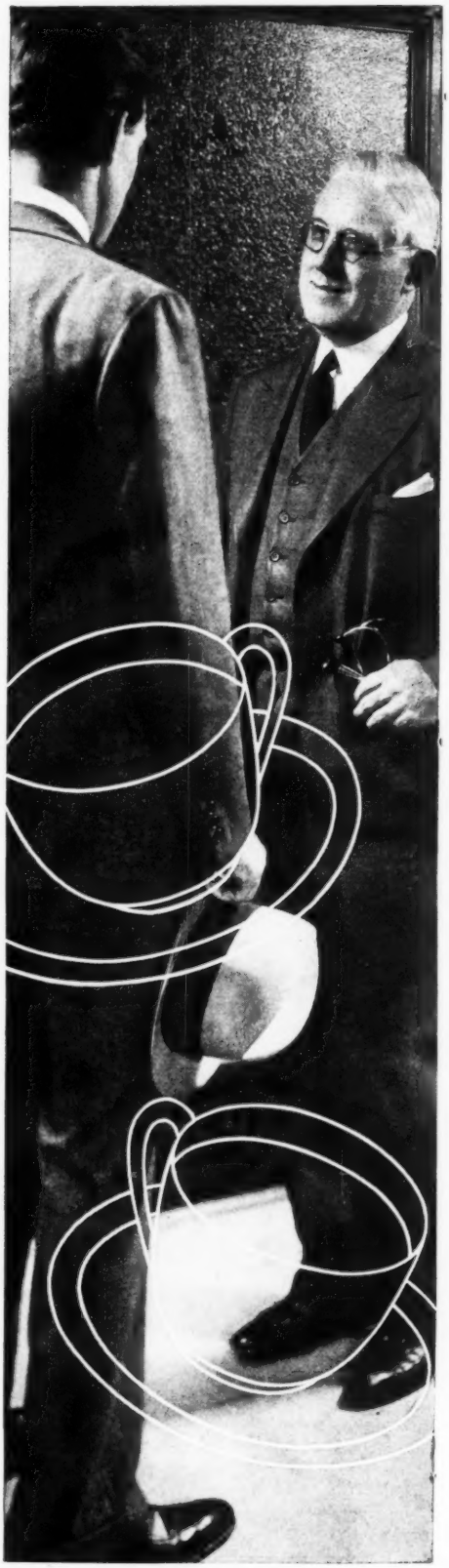

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You're in search of the best and safest measure to restore the alkali balance—and we have no hesitation to recommend Alka-Zane to you. If the satisfactory experience of others means anything, you will try Alka-Zane on this score alone.

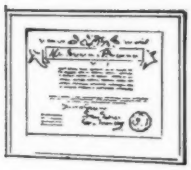
Nothing enters into the composition of Alka-Zane that is marked by doubt of its therapeutic value. Only the carbonates, phosphates and citrates of sodium, potassium, calcium and magnesium to form a palatable drink in solution. No lactates, no tartrates, no sulphates; no sodium chloride.

Alka-Zane may be dissolved in water and added to milk after effervescence has subsided.

Let us send you a trial package. There is no obligation or cost, of course.

WILLIAM R. WARNER & COMPANY, Inc., 113 West 18th Street, New York City

Agents for Canada: Wm. R. Warner, Ltd., 727 King St., W., Toronto, Ont.



FOR YOU TO DECIDE

This ethical and efficient means of vaginal hygiene is the instrument of *your* will. You are the judge who decides whether vaginal hygiene shall be employed; how long the patient's health shall require its continuance.

The confidence in Ortho-Gynol is based on three well-known facts. (1) Its proved dependability. (2) The professional background. (3) Its ethical introduction. Two years of Johnson & Johnson laboratory research—followed by clinical tests in leading hospitals—then introduced to physicians. The wide-spread professional interest in Ortho-Gynol is denoted by the amazing number of requests for samples and literature.

Ortho-Gynol is described minutely in a booklet distributed to physicians only. Ortho-Gynol gives double protection—chemical and mechanical. Its antiseptic ingredients are entirely adequate. Its base resists solution and remains where spread for several hours.

Ortho-Gynol may be Confidently Prescribed

You need not hesitate to prescribe Ortho-Gynol for vaginal hygiene (with or without pessary); also for local treatment of Vaginitis and Leukorrhea.

Send for Complimentary Package

To any practising physician who has not already been supplied, we shall gladly send a full-size tube of Ortho-Gynol (lettered or unlettered) with applicator (actual value $1.50).

ortho-gynol

APPROVED

FOR VAGINAL HYGIENE

Johnson & Johnson

NEW BRUNSWICK N. J., U. S. A.

The great psychologist,
William James,
Sized man up rightly
As a creature of habit.
His habits once formed,
Man holds on to them
Tenaciously.
Any attempt at change meets
With great resistance.
Regular bowel movement
Is also the result
Of the formation
Of regular habits.
This is possible
When AGAROL
Is the treatment
Of *constipation.*
For Agarol,
The original emulsion
Of mineral oil and agar-agar
With phenolphthalein,
Not only softens
The intestinal contents,
But also gently
Stimulates
The peristaltic function.
This makes evacuation
Not only easy
But also certain
When a dose,
A tablespoonful,
Is taken
At bedtime.
Soon after breakfast
Next morning
Evacuation
Takes place.
Repeated daily
This soon will grow
Into constant habit.
Regularity
Makes for habit;
And habit
For regularity.
And Agarol
Promotes both.

+

Would you try it
And be convinced?
Just write—and soon
A package will be
On the way to you.

Agarol is the original mineral oil and agar-agar emulsion with phenolphthalein . . . Palatable, easily mixed with other liquids, when desired, Agarol is suitable for every age period.

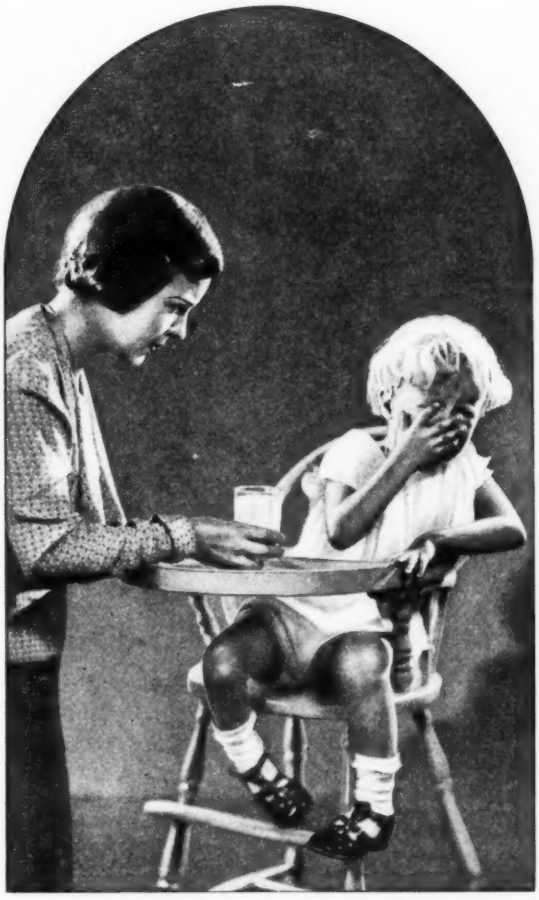
AGAROL *for Constipation*

WILLIAM R. WARNER & CO., Inc., 113 WEST 18th STREET, NEW YORK CITY

Agents for Canada: Wm. R. Warner, Ltd., 727 King St., W., Toronto, Ont.

Solving the problem of MALNUTRITION

in children who won't drink milk



Cocomalt is accepted by the Committee on Foods of the American Medical Association. That is your guarantee of its trustworthiness.

GROWING children should drink milk —plenty of it. But many youngsters dislike plain milk, refuse to drink it—with the result that they are underweight and poorly developed.

For such children—for *all* growing children—Cocomalt in milk is recommended. For not only do children love the creamy, delicious flavor of Cocomalt and milk; but also when mixed as directed, Cocomalt increases the *food-energy value of milk 70%*.

Prepared according to label directions, Cocomalt adds 110 extra calories—increasing the protein content 45%, the carbohydrate content 184% and the mineral content (calcium and phosphorus) 48%. Every glass of Cocomalt in milk a child drinks is equal in food-energy value to almost two glasses of plain milk. It is easily digested—quickly assimilated.

Licensed by Wisconsin Alumni Research Foundation

Highly significant is the fact that Cocomalt contains not less than 30 Steenbock (300 ADMA) units of Vitamin D per ounce—the amount used to make one glass or cup. This rich supply of Vitamin D makes possible a more efficient utilization of the calcium and phosphorus furnished by Cocomalt and milk for the formation of strong bones, sound teeth and sturdy bodies.

Cocomalt is high in food value, low in cost. At grocers and drug stores in ½-lb., 1-lb. and special 5-lb. hospital or family size cans.

Free to Osteopaths

We will be glad to send a trial can of Cocomalt *free* to any osteopathic physician requesting it. Just mail this coupon.

Cocomalt

DELICIOUS HOT OR COLD

Cocomalt is a scientific food concentrate of selected cocoa, barley malt extract, partially defatted milk, sugar, eggs, flavoring, and added Vitamin D.

Adds 70% More Nourishment (Food-Energy) to Milk

(Prepared according to label directions)

R. B. DAVIS CO., Dept. 25S,
Hoboken, N. J.

Please send me a trial can of Cocomalt free.

*Name*_____

*Address*_____

*City*_____ *State*_____

WHITE ROCK
and the Sickly Stomach

Nausea? White Rock, highly carbonated, will most frequently relieve it . . .

But more than that . . .

White Rock Mineral Water can often be recommended to increase appetite, promote digestion and motility . . .

In other words a pleasant and useful addition to the diet in pregnancy, many functional disturbances of the stomach, in hyperacidity and often (with milk or alone) in the later stages of ulcer diets.

White Rock
The leading mineral water

AUTHORITATIVE BOOKLET SENT ON REQUEST

JO-10-32

WHITE ROCK MINERAL SPRINGS CO.
100 Broadway, New York City.

Gentlemen:

Please send me your booklet, "WHITE ROCK IN THE DIET."

Name .....

Address .....

City..... State.....

Prescribe
KNOX *Sparkling* GELATINE

IN DIETS FOR DIABETES, LIQUID AND SOFT FEEDING

REDUCING AND ANEMIA

REMEMBER KNOX IS THE REAL GELATINE

Pure, granulated plain gelatine with 85-86% protein content. Free from flavoring, coloring or sweetening—therefore combines safely and perfectly with other foods for all diets.

DATA AND RECIPE BOOKS ON REQUEST

KNOX GELATINE LABORATORIES, 412 KNOX AVE., JOHNSTOWN, N. Y.

WHOLE WHEAT
. . . its advantages in the diet

"The greatest advantages that would accrue to the American people on the adoption of whole wheat would be a very decided and very beneficial increase in the intake of iron, in undigestible residue, and in the intake of water-soluble B and fat-soluble E vitamins."*

Whole Wheat notably makes up deficiencies in diet.

Calcium, phosphorus, iron, bran, vitamins . . . these are the important additions to the diet furnished by **whole wheat.**

Your suggestions on diet carry great weight and authority behind them . . . these facts on **whole wheat** will interest you.

Doctors will find a wealth of valuable clinical material interestingly presented in two booklets we have which are yours for the asking. We shall also be glad to send you as many pamphlets entitled, "The Story of a Grain of Wheat" as you want, so that you can give them to your patients.

*Victor E. Levine, M.D., Ph.D., Archives of Pediatrics, May, 1929.

Bureau of Whole Wheat Foods

NATIONAL BISCUIT COMPANY
"Uneeda Bakers"

449 West 14th Street **New York**

Mail This for Interesting Literature

Gentlemen: M-7

Please send me _____ pamphlets and data on whole wheat.

Name .....

Street .....

City .....

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Here's an Effective Way to Supply "Iron"

PHYSICIANS know from bitter experience how little reliance can be placed on the average iron tonics and pills.

They also know that children and adults do not relish a steady diet of those bulky vegetables and greens which are admittedly the most wholesome source of blood iron.

Fortunately there is an easier—a more scientific and effective way of supplying iron in assimilable form—

FOOD FERRIN

Food Ferrin contains an abundance of soluble iron associated with copper and the chlorophyll of plants in such concentrated form that a tablespoonful — the usual dose — supplies as much iron as a pound of spinach..

You can confirm the value of Food Ferrin. We will gladly supply clinical sample for a test.

MAIL COUPON TODAY

THE BATTLE CREEK FOOD COMPANY
Dept. AOA-10-32, Battle Creek, Michigan.
Send me, without obligation, literature and trial bottle of Food Ferrin.

Name .....

Address .....

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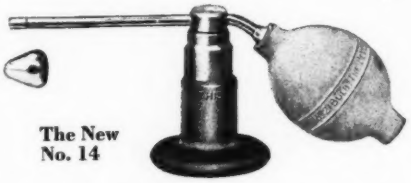
THE TWO LEADING DeVILBISS Prescription Atomizers

The No. 15 Gold Tip

For many years, physicians everywhere have recognized the value of the No. 15 DeVilbiss Atomizer in applying sprayed solutions in prescribed self-treatment. Recent improvements are found in the new gold tip model now in stock at all druggists. Dependable and certain in the hands of the patient, the No. 15 applies the treatment you want gently and thoroughly. We suggest you write "DeVilbiss Atomizer No. 15" on a prescription where its use is indicated.



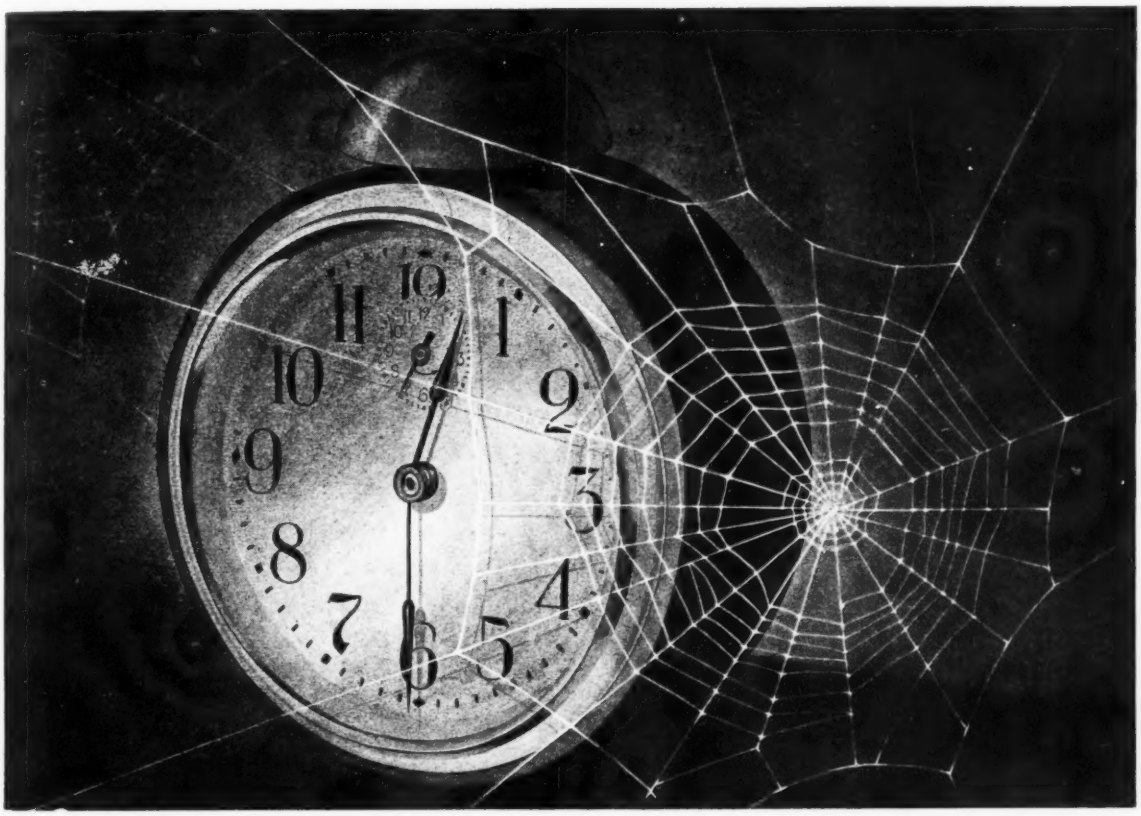
The New No. 14

This new DeVilbiss Atomizer, especially designed for the application of Ephedrine, has been enthusiastically received by the profession everywhere. The small bottle insures complete and economical use of solutions prescribed in small quantities. The No. 14 is truly DeVilbiss throughout, containing all the features of DeVilbiss Atomizers which have made them the dependable ally of the profession. When prescribing Ephedrine, or other solutions used in small quantities, we suggest you specify the DeVilbiss No. 14 Atomizer.

DeVilbiss

The DeVilbiss Company, Toledo, Ohio, headquarters for atomizers and vaporizers for professional and home use.

HE DIDN'T WAKE UP FOR FORTY YEARS



HE FIGURED that health was a matter of accident—either you had it, or you didn't. So far as the rules of sane living are concerned, he's been sound asleep for forty years. He's abused himself with too much work and worry—too much dependence on stimulants when his own strength failed. And he wakes up—a patient, and a problem.

The habits he's been nursing for years have a hold on him—that caffein habit especially. You may have difficulty in making up *his* mind to avoid drinks that contain caffein, if you should deem it necessary. Postum, however, can simplify this difficulty.

Postum is a delicious, fragrant drink that makes it easy to give up caffein-containing beverages. It is so good that forbidden drinks are soon forgotten. So good, indeed, that two and a half million families enjoy it regularly. Postum is made only from sun-ripened whole wheat and bran roasted to a turn, and slightly sweetened. It contains no stimulants of any kind.

Postum comes in two forms, Postum Cereal, the kind that is boiled, and Instant Postum, made instantly in the cup. Instant Postum, made with milk and served hot or iced, is very helpful to patients who are under-nourished. It is so good that it is relished even by patients who ordinarily don't like milk. Postum is a product of General Foods.

We shall be glad to send osteopathic physicians a gift package containing a full-size package of Instant Postum, together with samples of Grape-Nuts, Grape-Nuts Flakes, Post Toasties, Whole Bran, and Post's Bran Flakes. Address General Foods, Dept. PZ-1032, Battle Creek, Michigan. If you live in Canada, address General Foods, Limited, Dept. PZ-1032, Cobourg, Ont.

A new Gerber Product

Baby's Cereal

Ready-to-Serve

Long-Cooked in Whole Milk

GERBER'S Strained Cereal is made from finely ground whole wheat, hulled oats, and added wheat germ, with sufficient whole, fresh milk to provide the desired consistency. It is softened and thickened by cooking in glass-lined retorts at 10 pounds steam pressure in order that soluble nutrients in the bran may be retained. The harsh bran particles are removed by straining through finely perforated monel metal screen. The consistency of the strained cereal is adjusted as necessary by evaporation under vacuum or with the addition of more milk. The product is then filled in steam-washed cans and immediately sealed. Final cooking proceeds by the Gerber process in a closed system under steam pressure.

Except for the extra wheat germ, nothing is added to the natural, nutritive properties of the whole wheat and hulled oats. The cooking in whole, fresh milk lends additional food value and gives the cereal a distinctive flavor. No further cooking is required. Merely warm to feeding temperature. Readily diluted with milk or water for bottle feedings.

Send for Sample

We hope, in that it provides a combination of ideal factors, plus the insurance of regularity and uniformity in the observance of dietary regime in the home—that this newest Gerber Product may prove of definite service. We are anxious to have you examine the product. Won't you return the coupon to us today so we may forward a regular size package of the product for your examination?

Unseasoned

In preparing Gerber's Strained Cereal, no salt or sugar is added. The mother should be instructed to season as you wish for the individual diet requirement.

At Grocers and Druggists

Gerber's Strained Cereal is packed in 10¼ oz. cans 15¢

Gerber's
STRAINED CEREAL

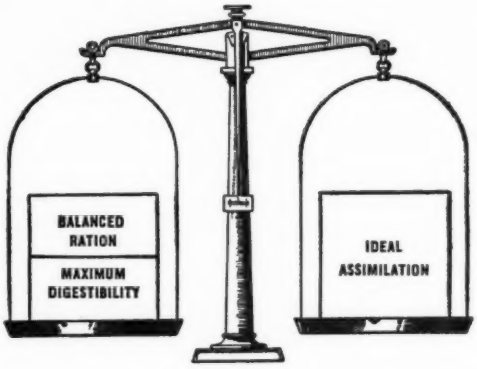
GERBER PRODUCTS CO., Fremont, Michigan.

You may send me a sample of Gerber's Strained Cereal — also analysis and description of the product as filed for acceptance with the Foods Committee of the American Medical Association.

Name.....

Address.....OA-9

Balanced ration + maximum digestibility = *ideal assimilation*



THE primary aim in substitute feeding is to select a properly *balanced* ration which the infant *metabolizes* as well as it does human milk.

Lactogen has the correct physiological balance—because the prescribed dilution closely approximates human milk in percentages of milk fat, milk protein, milk sugar and total salts.

The Lactogen formula is easily digested and assimilated because of its processed protein and the dispersion of its fat in fine globules.

An ethical product advertised only to the medical profession.

• • •

Samples of Lactogen gladly sent to physicians. Mail your professional blank to

NESTLÉ'S MILK PRODUCTS, Inc.

2 Lafayette Street - Dept. 7L10 - New York City

When we say
S·M·A is "Like Breast Milk"

We mean similar in all these ways—

Fat

Not only does S. M. A., when ready to feed, have the same total amount of fat as human milk, but S. M. A. fat also resembles human milk fat in having the same chemical and physical characteristics. S. M. A. fat has the same Saponification number, Iodine number, Reichert-Meissl number, Polenske number, Melting point, and Refractive index as the fat in mothers' milk. We mean these things when we say "Like Breast Milk."

Protein

S. M. A. has the same percentage of protein as breast milk and this protein, as a result of the laboratory processing, has a curd tension close to that of breast milk, producing a soft fluid curd instead of a hard curd like cows' milk. This is one thing we mean when we say "Like Breast Milk."

Carbohydrate

S. M. A. has the same percentage of carbohydrate as breast milk and the same kind, namely lactose. Furthermore, this is a combination of alpha and beta lactose in the same proportion as it occurs in human milk, thus making it identical with the "natural" lactose found in breast milk. We mean this, too, when we say "Like Breast Milk."

Buffer

The buffer value of S. M. A. is the same as that of breast milk. This means that the pH of the stomach contents after ingestion of S. M. A. are the same as after the ingestion of breast milk. This is in contrast to the strain on the gastric glands caused by the feeding of formulas having incorrect buffer capacities such as ordinary cows' milk formulas. This identical pH is another reason why we say S. M. A. is "Like Breast Milk."

Digestibility

S. M. A. may be used for infants of any age with excellent results, either when breast milk is not available or as a supplement to breast milk. Since S. M. A. is so similar to breast milk, such combinations are very readily made with excellent results. Furthermore, because the buffer value of S. M. A. is the same as that of breast milk, S. M. A. imposes no extra load on the digestive system with the result that the gastric emptying time is the same as when breast milk is fed. These are two of the things we mean when we say "Like Breast Milk."

Stools

The stools of S. M. A. in most instances have the same color, odor and consistency as those produced by human milk; and when stained according to the Weigert-Escherich stain show the bacterial flora to be predominately acidophile. This is another thing we mean when we say "Like Breast Milk."

Minerals

The mineral content of S. M. A. is adjusted so that it contains adequate amounts of potassium, sodium, magnesium, calcium phosphorous, iron, copper, chlorides and sulphates according to the standards set by human milk itself. Therefore in these respects also S. M. A. is "Like Breast Milk."

Other Physical Characteristics

S. M. A. has a caloric value of 20 per ounce, a pH of 7.0, a depression of freezing point of 0.56, and an electrical conductivity of 0.0022, and these are all the same as the corresponding values for breast milk. So in these respects also we say S. M. A. is "Like Breast Milk."

Antirachitic Factor

Breast fed babies are customarily given cod liver oil to prevent rickets and spasmophilia. S. M. A. contains enough cod liver oil to prevent rickets and spasmophilia. S. M. A. is therefore a distinct advance and we are pleased to admit that in this respect S. M. A. is not "Like Breast Milk."

◆ ◆ ◆

IT IS TRUE that there are many meritorious infant feeding methods that produce satisfactory results when supervised by a physician. However most physicians agree that breast milk is the ideal food when available. Therefore we sincerely invite your consideration of S. M. A. for infants deprived of breast milk not only because it resembles breast milk so closely and prevents rickets and spasmophilia but also ***because S. M. A. produces results more simply and more quickly.***

It was demand created by news of such results that caused S. M. A. to be offered to the medical profession generally in 1921. Since then, the excellent results produced by intelligent prescribing of S. M. A. have caused physicians to prescribe it for hundreds of thousands of infants. Today S. M. A. is available practically everywhere in the United States and in several foreign countries.

What is S·M·A?

S. M. A. is a food for infants—derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar, potassium chloride and salts; altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrates and ash, in chemical constants of the fat and in physical properties.

S·M·A Corporation

4614 Prospect Avenue
Cleveland, Ohio, U.S.A.

San Francisco . . . 437-9 Phelan Building
Toronto, Canada . . 64 Gerrard Street, East

Copyright 1932, S. M. A. Corporation

Attach this coupon to your prescription blank or letterhead.

Please send me without obligation:

☐ Trial supply of S. M. A. with feeding suggestions.

☐ "Milk Allergy" booklet.....a resume of current literature on milk allergy with information concerning Smaco Hypo-Allergic Milks.

3-102

prompt results ---

DEPEND SO MUCH UPON EFFICIENT EQUIPMENT

Electro-Chemical—mechanical and thermal effects are produced by sinusoidal and galvanic currents singly or in combination.

The Burdick Morse Wave Generator

Dependability, efficiency and precise accuracy of control provide the operator of the Burdick Morse Wave Generator with a priceless factor in securing prompt and satisfactory results.

This ideal apparatus for producing Mechanical, Physical and Chemical Effects in living tissue marks another great contribution to the field of physiotherapy. It has been received with enthusiasm by practitioner and specialist alike.

You are urged to write for complete data on its ten outstanding points of superiority—that caused six New York City hospitals to install Burdick Morse Wave Generators in a single month.

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PHYSICAL THERAPY EQUIPMENT

Air-cooled Quartz Lamps	Water-cooled Quartz Lamps
Deep Therapy Lamps	Zoalite Infra-red Lamps
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THE BURDICK CORPORATION,
Dept. 60, Milton, Wis.

You may send me complete literature regarding the Burdick Morse Wave Generator.

Dr.....

Address.....

State.....City.....

The Pendulum Swings Back

For several years poultices and plasters have been largely out of favor with the doctor. But now they are "coming back," because the physician is finding in a certain type of plaster or emplastrum a means of concentrating his medicinal action over the affected area.

This is effected by making the cataplasm the vehicle for active medicinal agents which are quickly absorbed through the skin—so the term "Cataplasm Plus" has been applied to

NUMOTIZINE

because it is a cataplasm of kaolin which contains guaiacol and beechwood creosote.

Applied to the skin, these medicinal agents with a well known action are absorbed over a period of time so that the patient has the benefit of prolonged action without gastric disturbance or nausea. The drug effect is not wasted, but is concentrated topically, over the area being treated.

The clinical efficacy of Numotizine is swinging back the pendulum, and bringing the emplastrum into favor for the relief of local pain and congestion, as well as for the reduction of fever temperature.

Sample and literature on request.

NUMOTIZINE, Inc.
900 NORTH FRANKLIN ST.
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AN ALKALINE DIGESTANT IN PREGNANCY

HASSELBALCH AND GAMMELTOFT, Stieglitz, Losee and Van Slyke and other investigators find a complicating acidosis in even normal pregnancies. Fischer finds that an acidosis during this period may result from starvation consequent upon vomiting, nausea and the diet restrictions frequently laid down for this type of patient.

▪ ▪ ▪

The value of a digestive aid which likewise alkalinizes will be appreciated as an adjunct to diet regulation.

▪ ▪ ▪

The prophylactic use of BiSoDoL—the balanced antacid—may be employed to safeguard against the possibility of a more serious acidotic condition.

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Not only is BiSoDoL a safe and pleasant antacid, but because of the antiflatulents and enzymes in the formula, it offers a valuable digestive aid and so helps to prevent morning sickness and vomiting.

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BiSoDoL may be administered in doses of one-half to one teaspoonful in milk or water. In the ordinary, everyday conditions of gastric hyperacidity, the use of BiSoDoL combats acid excess and so overcomes the sour stomach, gastric pain and other symptoms which call for quick relief.

BiSoDoL

The BiSoDoL Company

130 Bristol Street ▪ New Haven, Conn.

SARÁKA

TRADE MARK REG. U.S. PAT. OFF.

FORMERLY KNOWN AS
NORMACOL

For your
cases of

HABITUAL CONSTIPATION

THE PRINCIPAL ingredient is a tree sap which comes from India. This material has tremendous swelling power which produces

BULK PLUS MOTILITY

which is brought about by the addition of a small amount of frangula. The gastrointestinal tract is stimulated to a *natural activity*. The result is a *smooth stool* moving regularly, without griping or intestinal disturbance.

•

NON HABIT FORMING
PLEASANT TO TAKE
IMPROVED PRODUCT
LARGER PACKAGE
containing 10 ozs.

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SCHERING CORPORATION
75 West Street, New York, N.Y.

Please send me a complimentary package of SARÁKA.

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Street_____

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State_____

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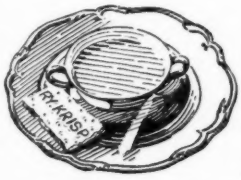
SCHERING CORPORATION
75 West Street New York, N.Y.

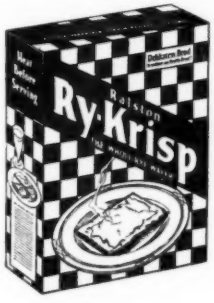
"I'm glad you said Ry-Krisp, Doctor —It tastes so good"



YOU who direct diets need no introduction to the fact that patients will adhere more carefully to a diet which includes palatable foods. Because "it tastes so good" Ry-Krisp is found to be highly acceptable in many restricted diets.

There's a tempting crispness—a distinctive flavor to Ry-Krisp Whole Rye Wafers which makes them welcome at every meal — with as wide a variety of foods as the specific diet permits.

Ry-Krisp is made of flaked whole rye, water and a dash of salt — double-baked to insure lasting crispness. That's all—yet the very simplicity of its composition makes Ry-Krisp not only acceptable but highly valuable as a safe, whole-some food—(a) for patients allergic to wheat, milk or eggs, (b) in diets planned to assist laxation, or (c) for moderately restricted carbohydrate diets.



Our Laboratory Research Report on Ry-Krisp Whole Rye Wafers and the booklet Special Recipes, Menus and Food Lists for wheat, egg and milk-free diets will be of material assistance to you in planning special diets. These will be forwarded to you at once without cost. Just fill in the coupon or attach it to your letterhead.

Ry-Krisp *Whole Rye Wafers*

RALSTON PURINA COMPANY, 520 Checkerboard Square, St. Louis, Mo.
Without obligation, please send me your Laboratory Research Report on Ry-Krisp, a booklet of special recipes, and a supply for testing.

Name.....

Address.....

City.....

This offer limited to residents of the United States and Canada

Activation Through Osteopathy

—*plus*

Nourishment With Endocrine Feeding!

Activation of the Entire Endocrine system Through Osteopathic Manipulation, Plus Nourishment of the Involved Endocrine Cycle Through the Feeding of Associated Glandular Substances, is Producing Results That Are as Noteworthy as Those Obtained by Osteopathy During the Epidemic Days of the War

1 The Endocrine Food Company specializes solely in gland food formulas for the osteopathic profession.

We are endeavoring to supply dependably potent **endocrine foods in association**—directly to the profession at as low a price as is in keeping with the high potency and quality of our preparations.

2 The **raw glands** used in the Endocrine Food preparations are collected fresh from the abattoirs of New York and New Jersey; are promptly trimmed and dehydrated before any deterioration can occur. No frozen glands are used, and no fat solvents that might tend to destroy the active principle of the gland.

3 The **manufacture** is conducted under the most exacting conditions and in accordance with the most approved methods resulting from long experience in the scientific handling of glands from animal to the finished product.

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*Symposium on The Diaphragmatic Mechanism**

Treatment to Influence Diaphragmatic Action

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Boston

The object of this presentation is to suggest for a special trial in practice an osteopathic manipulative procedure designed to influence a fundamental body mechanism, namely, the diaphragm.

Dr. Russell Peckham will outline and discuss the anatomy directly related to this mechanism. Dr. Louisa Burns will discuss the physiology.

Every one is familiar with the possibilities of treatment to influence diaphragmatic action. Everybody knows the various factors of treatment of the diaphragm, and its effects. We are all familiar with the striking results of osteopathic treatment affecting this fundamental mechanism of the body.

This is an attempt to set down in an orderly manner certain things which have become so commonplace with us that they are no longer generally appreciated as remarkable therapeutic agents. Attention is focused on the anatomy and physiology of the mechanism under discussion in order that the proposed plan of treatment will not range beyond the anatomical and physiological facts.

Among the helpful criticisms by different people during the preparation of this paper, one by Dr. R. S. Coryell of Brooklyn, gave warning that confusion or misunderstanding might arise if no mention is made of the fact that a person may live with a paralyzed diaphragm. The kind of existence permitted with the diaphragm paralyzed is such that no additional jeopardy, such as a failing respiratory center, could be added with hope of survival. We are considering here a diaphragmatic mechanism willing and able to function in some measure if the load is not too great. The paralyzed diaphragm is a rare condition.

The diaphragm struggling against a resisting chest wall, in addition to meeting the stress of extra functional load, is a common situation. It is a fundamental situation frequently seen in acute and chronic disease, but, for the most part, we are considering the acute and subacute emergency of the willing but overloaded diaphragm.

*Delivered before the General Session of the Thirty-Sixth Annual A.O.A. Convention, Detroit, 1932.

RESPIRATORY CENTER AND DIAPHRAGMATIC ACTION

For the practical consideration of this problem it is reasonable to say that the operation of the diaphragm is the operation of life itself. When everything else fails, and when circumstances are such that the body is unable to conduct high powered stimulants to the points where they may be effective, artificial respiration, as a last resort, inducting life into the newborn, the asphyxiated, and the drowned, is based upon the recovery of the respiratory center through the *response* of the diaphragm. We know that nothing can be expected if there is intrinsic failure in the respiratory center itself. We also know that when the respiratory center is overwhelmed it is often restored by artificially reproducing the physiology of the mechanism it controls, but there may be conditions of overload affecting the diaphragm in its own structure, in its attachments, and in the parts it has to move, and poor diaphragmatic response on these accounts may prevent the successful recovery of a feebly struggling respiratory center. We understand something of the respiratory center; we understand something of the phenomenon of inrushing air to the lungs upon successful life induction, but if the diaphragm is fixed, or restricted by resisting parts, and does not ably respond, no power center furnishing expansion effort to the chest wall will, by itself, successfully initiate or reinduce life, though it may be waiting upon the threshold.

No extra load or resistance should be allowed to hamper the respiratory center.

The awakening of the respiratory center seems to be "on the knees of the gods," but the operation of the diaphragmatic mechanism one might dare to say is somewhat in our hands.

In this discussion and demonstration the operation of the diaphragmatic mechanism—the respiratory center and phrenic nerve supply—will be considered, but much the greater stress will be laid on the terminal end—the diaphragm itself, its attachments, the related chest wall and the adjacent viscera. The idea is tc concentrate on those factors which might overload the diaphragm and prevent or delay its response to the impulses from the center. The factors seeming to demand first consideration might be: Abdominal muscle spasm;

congested, distorted or enlarged related viscera; ptosis; distension (gas or fluid). But most important in consideration of the proposed treatment are the related spinal centers affecting the chest wall and the diaphragmatic attachments.

Whether the accumulated fixation, or approximation of the ribs and vertebrae of the diaphragmatic section of the chest wall is due to temporary contraction or to an old fixation of the chronic type, the object is nothing less than manually to oppose by osteopathic manipulation the chest wall rigidity, great or slight, from any cause whatever; and to restore, in whatever measure possible and fitting, the freer movement of the ribs and vertebrae of the lower half of the chest wall.

The great principle of artificial respiration is contained in the artificial operation of the terminal end of the diaphragmatic mechanism in an effort to induce a retarded, weak, or even dying respiratory center to take charge.

Too often the diaphragm does not respond, no matter how expert or persistent the application of the ordinarily known procedure used in resuscitation by artificial respiration; and the factor in the failure might easily be the inability of the weakened and struggling diaphragm to overcome the resistance of the chest wall.

From the osteopathic experience we know the vast difference in the forcible movement of a whole chest wall area as one piece; and the movement of the same area when each unit of rib, vertebra and muscle is made to contribute its share of motion toward the general flexibility of the part.

This is the osteopathic angle.

On this proposition alone this treatment is proposed to you for a trial in practice.

We are all familiar with the effect of treatment to restore restricted diaphragmatic motion.

We all know the facts.

There is no supertechnic in this procedure.

The question of "who is a better operator than whom" does not come up.

We are trying to demonstrate a thing, commonplace with us, analyze it, put it in order for *calculated* use, and give it place and consideration as the wonderful thing it is.

Two cases are here set down as examples.

The first one illustrates the response of the diaphragmatic section to treatment and, through this response to treatment, the reestablishment of the respiratory center at a time when no treatment could be given to influence the phrenics in the cervical region, or to influence locally a respiratory center in jeopardy.

CASE I—BULBAR PALSY

Patient, aged 59; 5′ 4″; 120 lbs.; a widow twenty years. Two children, 31 and 34. Ordinary history except for more than ordinary nerve strain for twenty years and periods of functional high blood pressure; for the last ten years a true progressive arteriosclerosis with much less than the usual accompanying hard kidney effects apparent.

A very slight hemiplegia appeared four years ago, from which a very good recovery was made, and which was followed by a blood pressure change from 200/120 to 175/90, occasionally as low as 160/80.

After an attack of influenza two years ago, the blood pressure rose again to 220/120. A few weeks later at 1:00 a. m. the patient was stricken with bulbar palsy—a typical clinical picture with *no* trace of the old hemiplegia appearing.

The patient was seen at 2:00 a. m. She had been raised on pillows to a sitting position in bed. The pulse was 70, irregular and weak, with about one systolic impulse in six, heavily accentuated. Her eyes were bulging. Muscles of extraordinary respiration stood out in intense contraction; respiration was labored, with loudly audible sounds and violent attempts to increase diaphragmatic excursion, which was limited—in fact almost nil. If it is possible to describe a breathing type as a *violent* Cheyne-Stokes', it was this type, for the breathing continued rhythmically, a violent period followed by a lull.

The patient was conscious, speechless, facial distortion to right, tongue thick and inert; hands clutching at chest, bed clothes or anything brought within reach. Naturally, the first attempt would be to relieve the tissue pressure between the maxillary angle and the transverse process of the atlas, and to search for a chance to relieve the phrenics. This attempt was followed by severe signs of distress, a slight convulsion, with eyes closed, and breathing suspended for about three seconds. The patient showed intense fear of any approach to the suboccipiut. It was apparent one could not continue the attempt to relieve the central mechanism; the respiratory center was heavily encroached upon by the effect of the palsy, but the diaphragm was apparently rigid. If one could make the diaphragm move and relieve the load on the intense respiratory impulse, the associated contraction in the neck might be relieved. So treatment was begun to lift the diaphragm carefully, synchronously with the breathing. This was done, ten to twenty lifts, at about six to fifteen minute intervals for three hours. Great relief followed; the violence subsided; but death was apparently imminent from exhaustion, general and respiratory center involvement.

An osteopathic consultant of note in our vicinity was called, who confirmed the diagnosis and the recorded situation, and gave it as his opinion that death was imminent any time in one to three hours. Up to 3:00 that day (fourteen hours duration), the diaphragm lifting was continued at increasing intervals, when the patient was relieved so that once or twice a day for three days afterward was sufficient to maintain the gain. Swallowing liquids was possible on the second day. Breathing continued easy, except for slight difficulty at occasional short periods. Urine was passed. The rectal contraction, which appeared three hours after the attack, was released. Blood pressure dropped to S 190—D 130. The patient has continued to gain, and has had two fairly comfortable years since. About fifty per cent of speech is recovered, and fifty per cent of the facial distortion persists.

CASE II—GENERAL SYSTEMIC TOXEMIA

The second case is one in which the whole body was toxin laden; the subdiaphragmatic organs—liver, spleen, pancreas—were holding a great blood mass in stasis; the gastro-intestinal system was almost inert, and the systemic antitoxin mechanism was overwhelmed by a low grade toxic process.

Without evidence of a virulent general sepsis,

death was approaching because of unrelieved load on the blood distributing mechanism.

The patient was a girl, twelve years of age, with a history of severe reaction to smallpox vaccination. Made recovery from all symptoms said to be associated with vaccination in about one year. Vaccinated at eight years of age. At nine years of age, generally speaking, normal. At ten years of age gave evidence of a toxic condition; slight secondary anemia; moderate acne. Odorous elimination—perspiration, respiration, urine, gastro-intestinal and colonic.

She was under medical treatment; special dietetic treatment; and school work was not reduced, although more than ordinary amount of time outdoors was allowed.

The tonsils attracted attention, and were examined several times, and tonsillotomy was recommended. There was little or no improvement for a year, and in the early part of her twelfth year tonsillotomy was done. The ordinary preliminary recovery from the operation took place; the convalescence period continued for about two weeks, but there was not a complete return to normal.

Three weeks after the operation, on her return to school, the child was inattentive and indolent. Immediately on going home, instead of going outdoors as the routine called for, she preferred to sleep; and was found sitting around in chairs or on a couch asleep. Notwithstanding these sleeping spells in the daytime, sleep continued uninterrupted through the night.

In the fourth week the urine began to be concentrated. Spells of sleepiness increased. The history indicates that colonic irrigation was used; also "high-powered" cathartics alternated with mild laxatives. History of spinal puncture was negative. Sweating was resorted to. All these measures gave little or no result by the fifth week after the operation. Somnolence was continuing and increasing. Blood test showed a further secondary anemia, and, according to the history, a dispute arose as to the real character of the anemia. It was thought to be an atypical, highly destructive type, without much evidence of hemolysis showing. The somnolence kept increasing and, although she was under observation of the best authorities, no diagnosis was made. There were two viewpoints; one, that it was an atypical blood destruction by some virulent septic element not identified; and the other, that it was an atypical form of encephalitis. Nothing was suggested for treatment except the irrigations and general nursing. Autogenous vaccine was apparently taboo because of the vaccination history, mentioned heretofore. A prognosis of probable death was given, with recommendation to observe the blood, and have a transfusion done at an indicated point. This was the beginning of the sixth week after the operation. The patient was roused with difficulty at almost any time—eating and drinking when aroused but without the eyes open except occasionally when position was shifted.

At this point I was called to the case.

There was no special structural distortion evident except a moderate contraction and an approximation of all the vertebral and costal units from the fourth dorsal to the second lumbar; with a general right functional curve.

The breathing was shallow—not labored, but limited. There was scarcely any motion in the diaphragmatic ribs.

Apparently there was a profound blood stasis in all subdiaphragmatic organs.

The heart mechanism was powerful enough to maintain a certain amount of circulatory balance with a little continuous extra effort, and the terminal circulation was in a state of vasoconstriction.

The diaphragm was forcing the movement of a resisting lower chest wall.

There was no cervical evidence to show that the phrenics were disturbed in the cervical area. So I decided on the ordinary, simple but effective treatment of restoring motion in vertebra and ribs of the diaphragmatic area.

There is only one precaution that I think of in applying this treatment; that is, that the manipulation for correction of this condition shall be made synchronous with the inspiration.

At the time of this first effort, here described, the patient was quite somnolent. There was renal albumin, casts, and a trace of sugar, with the specific gravity between 1.012 and 1.020 on a thirty ounce twenty-four-hour quantity.

Emanations from the body were odorous; the facial expression and skin appearance were that of the partially asphyxiated in the nonspasmic stage; and the prognosis by eminent authorities was death at the end of a somnolent period of from one to three weeks.

This first treatment was given about 2:00 p. m. By 6:00 p. m. the patient was restless, refused food and drink, and had a fever of 100°—the first fever to appear.

I stayed a part of that night with the patient, under the impression that this was the beginning of the end; and I thought that probably the subdiaphragmatic organs had unloaded the blood on to the system so rapidly as to bring on a toxic crisis.

At six o'clock the next morning the little girl lay awake, without speech and with an expression on her face of non-interest and rest, as one who had come to bed after a long journey. I am free to state that I did not know what this meant, but the mother said at once, "She is all right. That is the way she ought to look," and she spoke to the child in some familiar way, and the child answered in the same way.

She was treated as at first, three times in the next two days.

She was kept in bed.

We quit starchy broths and gruels, and gave her oranges, stewed fruit and, as she liked it, buttermilk was given in considerable quantity, and as often as she asked for it.

The enemas were continued.

She began drinking quantities of water.

On the fourth day after the first treatment the renal condition was cleared. No casts, no albumin, and no sugar.

On the fifth day she began sitting up and moving around.

I kept on treating her at intervals of two days. There were no further indications.

She went on to an uninterrupted recovery, and was in school ten days later, with no notable impairment of her faculties.

Let me call to your attention the remarks preceding the outline of these two cases. The first case (bulbar palsy) illustrates the response of the diaphragmatic section to treatment and, through this response

to treatment, the reëstablishment of the respiratory center at a time when no treatment could be given to influence the phrenics in the cervical region, or to influence locally a respiratory center in jeopardy.

The second case (general toxemia) is one in which the whole body was toxin laden; the subdiaphragmatic organs—liver, spleen, pancreas—were holding a great blood mass in stasis; the gastro-intestinal system was almost inert, and the systemic antitoxin mechanism was overwhelmed by a low grade toxic process. *Without* evidence of a virulent general sepsis, death was approaching because of unrelieved load on the blood-distributing mechanism.

PART II

(Read after Dr. Peckham and Dr. Burns presented the related anatomy and physiology.)

Dr. Peckham's survey of the anatomy concerned in this proposition seems to corroborate the writer's interpretation of his experience.

No anatomical fact outlined by Dr. Peckham is in conflict with the procedure here proposed for a special trial in practice.

TREATMENT DIRECTED TO SPINAL CENTERS

As was stated in the introduction, the factors seeming to demand first consideration might be abdominal muscle spasm; congested, distorted or enlarged related viscera; ptosis; distension (gas or fluid); but most important in consideration of the proposed treatment are the related spinal centers affecting the chest wall and the diaphragmatic attachments. That is to say, a diaphragm which is freed of the chest wall resistance, and made to move through anything like the normal range, will tend to relieve the drag of abdominal wall muscle spasm, congested viscera, ptosis and distension. The visceral effects may be ignored in the emergency of the respiratory failure. The muscular resistance of the chest wall is the immediate obstacle which may be reached at once.

The osteopathic effort to move the chest wall is ***not*** the ordinary procedure of *artificial* respiration.

The whole reason for an osteopathic consideration of this problem is contained in the difference between the osteopathic procedure and artificial respiration.

The ordinary artificial respiration procedure is complete when mechanical pressure is applied suddenly at short intervals to the posterior chest wall as one might make pressure on one side of a cask. The osteopathic procedure has for its object the restoring of motion in *each of the units of the framework and muscle which are the parts of the wall;* and, in the procedure, the effects of ordinary artificial respiration are incidentally included.

Can we render flexible any ordinary chest wall by osteopathic manipulation? My experience, and your experience, is that we can.

If we can, and if we can put the chest wall through its range of motion, and keep it moving, pending the recovery of the automatic mechanism, most of the other retarding influences will not hamper greatly from functional causes—only intrinsic damage in the respiratory center, the heart, or viscera or framework, should allow defeat.

Dr. Peckham's survey of the anatomy of the part under consideration certainly permits the following conclusions:

1. That the central fixation of the diaphragm is the primary attachment through which force is applied to the thoracic cage. (Peckham.)

(Central fixation is the best of evidence that the more movable the thoracic cage, the greater the chance for diaphragmatic influence on function.)

2. That the nature of the peripheral attachments to the intrafusal relationship of fibers from many origins require an equal, parallel, and proportionate separation of ribs to permit their maximum functional ability. (Peckham.)

(The necessity for an equal, parallel and proportionate separation of ribs is met by osteopathic manipulative adjustment.)

3. That the relative incapacities of different parts of the diaphragm resulting from faults in thoracic mobility, might decrease the ease of cardiac dilatation. (Peckham.)

(The heart itself is in jeopardy when chest wall resistance adds to its load in emergency.)

4. That obstructions to diaphragmatic movement may result from the presence of changes in consistency, size, or mobility of viscera above and below the diaphragm. (Peckham.)

(The highly important favorable change in consistency, size and mobility of viscera above and below the diaphragm is a reasonable expectation if resistance in the chest wall is successfully opposed by osteopathic procedure.)

We are here considering the human body stricken by disease, and we plan to do for that stricken body the natural—the obvious. We aim to counterfeit the very action and motion that the spirit of life itself is trying desperately to accomplish.

In the finely conditioned, natural athlete, if you would see visibly recuperating life at its thrilling best, look closely at him during the period of his recovery after a supreme effort. His voluntary body is relaxed and inert, but the automatic diaphragmatic section is heaving tremendously but rhythmically. This mechanism will restore the almost exhausted body to the appearance of normal in a few minutes. It is operating with full power, and with little or no restriction. The recuperating forces in evidence here are the same forces we depend upon in many an emergency. The difference is this: In health the mechanism is not restricted in its operation. In the conditions under consideration here the mechanism is restricted. It is reasonable to expect much of osteopathic procedure which aims to restore the range of motion in this fundamental mechanism.

After all this, you are warned that this treatment is extremely simple. There is no big moment in its description or demonstration. There is no skill necessary, *but,* that osteopathic sense and that appreciation of osteopathic values must be *in* you, if you are to be impressed with the importance of this wonderful proceeding which has been considered so commonplace with us.

In the two cases cited, the treatment was the same. In the bulbar palsy it will be recalled that the cervical region was so irritable that it could not be treated to influence the phrenics or the cervical ganglia. The treatment was to the diaphragmatic section of the spine. After the diaphragmatic section of the thoracic cage was repeatedly manipulated to increase its range of motion, the apparently failing respiratory center re-

sumed its action. In the toxic case the restoration and increase of diaphragmatic motion permitted the static blood in the subdiaphragmatic organs to move and ease the laboring heart, as well.

There is frequent repetition of one item in this paper. That is because there is only one important item in it; namely, chest wall resistance to diaphragmatic range of motion.

To restore chest wall flexibility is an osteopathic proposition. A resisting chest wall is a visible and palpable obstacle to capacity function. No time need be wasted in wondering whether or not an attempt should be made to relieve the obstacle. It is an obvious attempt to help the body do something it is desperately trying to do.

TREATMENT

Operator seated at bedside, level with bed or table. Patient lying on side, left or right side, according to the preponderance of restriction, distortion or contraction—the side showing the greater defect to be uppermost. Flex the knees at a suitable angle, thighs toward chest, slightly more than a right angle to the torso.

Operator's left hand under patient's lower side; right hand over patient's upper side. Place palmar surface of fingers and palms in position over most restricted part of region.

Operator's right foot on chair rung, and operator's right knee against patient's knees, to maintain position of patient's knees.

Operator to pull forward on diaphragmatic spinal and rib region, synchronizing the pull with the patient's inspiration—one corrective traction forward (flexing the diaphragmatic vertebra and ribs) for every two, three or four inspirations of patient.

Note any rigid areas, and exert correction traction or flexion where needed.

Five to ten times; then stop for fifteen minutes to one hour or longer—depending on response.

In the fifteen-minute to one hour, or longer, periods between diaphragmatic region manipulation, seek out such parts of the spinal and rib regions where there are no rib and vertebral lesions, and attempt to restore motion toward correction of the especially lesioned parts.

160 Newberry St.

Anatomy of the Diaphragm

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Structure.—

The diaphragm is a fibromuscular sheet intervening between thoracic and abdominal cavities. The superior and inferior surfaces are entirely covered with fibrous material usually called the muscle sheath. Over the surface of these fibrous layers pass the blood vessels and nerves to the muscle. External to these, and fused with the sheath of the muscle, is another fibrous layer which supports the serous coverings of the diaphragm, where they are present. On the upper surface of the diaphragm, the serous laminae form pleura at the lateral sides and pericardium in the intermediate portion. On the under surface, the serous covering, where present, forms peritoneum.

Fixed points of the diaphragm.—

The most stable, or most nearly fixed part of the diaphragm is that portion held in position by the pericardial attachment to its upper surface. The fibrous pericardium is attached to the under surface of the sternum, to the diaphragm, and is continuous with the sheaths of the great blood vessels. These vessel sheaths are derived from, and are continuous with the cervical fasciæ. Thus, the upper surface of the diaphragm is supported by continuous fibrous sheets to the root of the neck and to the under surface of the sternum. Although the central area of diaphragm is permitted a degree of depression when the musculature of the diaphragm contracts, the degree of depression is only that available because of elasticity of the fibrous supports.

Peripheral attachments of the diaphragm.—

The periphery of the diaphragm gains attachment to the lower six ribs or their costal cartilages, beginning with the twelfth rib posteriorly, and attaching to the eleventh, and to the cartilages of tenth, ninth, eighth, seventh, and, occasionally, the sixth ribs successively from behind forward.

An important point from the standpoint of function lies in the arrangement of attachment of diaphragmatic muscle fibers and other muscle fibers at their common points of origin.

The fibers of the diaphragm pass almost directly backward from their attachment to the under surfaces of the fifth, sixth, and seventh ribs, while those of the transversus abdominus muscle pass almost directly forward from the same points of attachment. The direction of fibers from points or origin leave each other at almost a right angle. The arrangement is called interdigitation. Such arrangements of muscle attachment require that the structure of attachment be permitted to move to points where the contraction of muscle becomes most effective. The most effective part of muscle contraction range lies within its middle one-half, greatest at a point half way between complete extension and complete flexion.

This general arrangement of attachment also occurs between the origin of the diaphragmatic crura and the psoas muscles.

Where such arrangements exist, efficient function, in part, depends upon the degree to which the structures of attachment for these muscles are permitted to have a range of movement proportionate to the design of the muscle units which arise from them.

From the upper three lumbar vertebræ on either side arises a mass of muscle fibers, which pass upward to enter into the formation of the diaphragm. These are called the crura of the diaphragm.

Posteriorly, close to the vertebral column, there is an interval on either side where the margin of the diaphragm does not make a strong attachment to the posterior thoracic wall. Just lateral to these arches are second and smaller arches which bridge over the proximal ends of the psoas muscles. These intervals are bridged by the posterior fibrous margin of the diaphragm and are called the lumbocostal arches. These arches are attached medially to the vertebral bodies, then to the transverse processes of first lumbar vertebra and, laterally, to the ends of the twelfth ribs.

Direction and termination of muscle fibers.—

The central portion of the diaphragm is entirely fibrous. The formation is, roughly, that of a three leaf clover. Into this central fibrous sheet are attached the muscle fibers as follows:

Fibers arising from the ribs or the costal cartilages run parallel to the long axis of the ribs, backwards and upwards toward the central tendon. Thus, contraction of these fibers tends to lift upward on the front of the chest wall without exerting sufficient force to cause approximation of the sides of the chest wall toward the midline. In this connection it is necessary to point out that the succession of muscle fibers, which make the dilation of the chest effective, extends from the scalenes attached to cervical vertebræ, directly downwards and forwards through successive costal interspaces. Contraction of these muscles results in elevation of the anterior ends of the ribs carrying sternum upward concordantly, thus increasing anteroposterior diameter; and elevation of the laterally depressed curves of the ribs tend to increase lateral diameter; to increase the superoinferior diameter of the thorax coincident with diaphragmatic depression.

The fibers of the periphery of the diaphragm are short and parallel, which requires that the peripheral attachment—the lower margin of the thoracic cage—represented by the lower six ribs and costal cartilages, must move synchronously to permit the exercise of the coördinated force of diaphragmatic contraction.

The crural fibers pass directly upwards until the level of diaphragm is reached, then gradually turn forward to come into accord with the domed contour of diaphragm. The crural fibers cross in front of the aortic opening and cross back in front of the esophagus. The crura together, form a figure eight arrangement around the aorta and esophagus. The fibers fuse with each other in passing and finally terminate in the central fibrous tendon of the diaphragm. The lateral margins of the crura are continuous with the fibers of costal origin from the twelfth rib, and contraction of these adjacent or continuous fibers is effected synchronously.

Shape and position of diaphragm relaxed.—

When the diaphragm is completely relaxed, it is crowded upward, or domed, by intra-diaphragmatic pressure, by viscera, and by force from abdominal muscles. The height of the dome is augmented by the fact that in expiration, when the diaphragm is relaxed the chest wall is dropped down, the lateral diameter is decreased, and the anteroposterior diameter is decreased by the same factor, so that at the time the dome is at its height the peripheral attachment or circumference is at its minimum.

Nervous coördination of the diaphragm.—

The nerve connections of the diaphragm are as follows: The principal motor nerve supply comes from the cervical segments over the phrenic nerves. In addition to these nerves, impulses are distributed to diaphragm from the vagus nerves, and from the lower six intercostal nerves.

No statement can be made concerning the functional connection between the vagus and diaphragm. The intercostal nerves are subject to some inference. These same lower intercostal nerves motivate the muscles of the abdominal walls and the intercostal spaces through which they pass. These various muscles require a very definite coördination to make respiratory work effective.

Much of the muscle, joint and tendon sense impulses which pass to the cord to permit proportional contraction and synergistic relaxation of the different units of the complex muscle group, must come from these muscles and from the joints moved by them. Thus, should a general fault of movement of any part appear, such as a part or segment of the thoracic cage, the tension variabilities resulting therefrom would produce a very great change in the sensory side of the reflexes by which the complex coördination is affected. Smoothness of operation would, in degree, be impaired and much good energy would be nullified and wasted in overcoming the incoördination.

An excellent illustration of the profound influence of a fault in the position or functional range of one rib alone, on the diaphragm, is readily appreciated by reference to the hiccoughs arising from such a lesion. In this case the muscle becomes so hypersensitized by the incoördination influence, that passing certain points during its contraction is accompanied by a spasm of a part or all of the whole muscle sheet. This illustration is of no importance to this paper other than as a concrete illustration of the complexity of the coördination of the numerous muscular components of respiratory function, and to indicate the necessity of precision in position and movement of the supporting structures to which these muscles are attached.

Changes occurring with contraction.—

With diaphragmatic contraction the following changes occur: The crura depress the posterior margin of the diaphragm slightly, but primarily draw the central tendon backward. This furnishes a substantial fixation of the central tendon against which the peripheral fibers of the muscle, which lie parallel to the long axis of their ribs of attachment, may exercise an effective pull. As they contract, the upward curve of the dome decreases until the sheet is flattened, after which the effect of the contraction tends to elevate the lower margin of the thoracic cage. The center of the diaphragm is prevented from marked depression by the pericardial attachment to its upper surface, which, in turn, is held up by sternal and cervical fascial attachments.

Visceral Relationships.—

The relation of viscera to the diaphragm is a factor worthy of consideration in connection with diaphragmatic function.

On its upper surface are the lungs and the heart. Normally, the lungs are of such consistency and mobility that they represent no hazard to phrenic movement. Pathological changes might become a definite interference. Normally the pericardial sac is large enough and its inferior attachment to the diaphragm is broad enough in circumference that pericardial tension does not embarrass the heart. Unusual tension might do this, especially should that tension increase be associated with a lateral pull upon the diaphragmatic attachment of the pericardium as a result of unequal contraction of, or incomplete recovery of, position of the two lateral halves of the diaphragm during relaxation.

It is possible that sudden increase in pericardial content might decrease the freedom of movement of

the central tendon and make movement of the diaphragm difficult of complete accomplishment.

On the under surface of the diaphragm are to be found the liver, stomach, spleen, kidneys, and, to some extent, other viscera. Of all these, the liver covers about three-fourths of the total under surface. The upper surface of the liver is fused with one part of the central tendon. Where the diaphragm goes, the liver goes. Also where the liver will not go, the diaphragm cannot go. This is true of other viscera attached to the under surface of the diaphragm, but the relationship of the liver is of most importance because most of the other viscera which derive support from the diaphragm gain the support from the diaphragm indirectly through the liver.

The contraction of the diaphragm, therefore, results in a decrease in the domed contour of the diaphragm and elevation of the lower margin of the thoracic cage. This is possible with maximum efficiency when the following factors are present: (1) An adequate fixation afforded by pericardial attachment to diaphragm, to sternum, and cervical fascias, and when the crura efficiently hold the central tendon from forward movement in order that the peripheral diaphragmatic fibers may exert force at their peripheral attachment; (2) when sufficiently mobile abdominal viscera and adequate intra-abdominal pressure are present to move the diaphragm upward when in state of relaxation, and when changes in viscera do not become an actual interference to movement; (3) when the chest wall is subject to such freedom of mobility as will permit synchronous and coördinated contraction of the parts of the diaphragm, together with other muscle components associated in respiratory function.

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Some Neglected Aspects of the Physiology of the Diaphragm

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We often quote Dr. A. T. Still, not because he made truths, nor even because he discovered new facts, but chiefly because he discovered new and vital relations between facts. Facts alone are as dry bones; facts properly related are vital, living servants. Dr. Still made us see proper relations, and taught us to use them in such a way as to promote human strength and usefulness. He stated facts and their relations amusingly and vividly. For example, after describing the anatomy, physiology and innervation of the diaphragm, he says this: "The diaphragm says 'By me you live and by me you die. I hold in my hands the powers of life and death. Acquaint now thyself with me and be at ease.'"

The diaphragm is sufficiently complicated in its functions and in its development to justify it in using such language.

The embryological development of the diaphragm explains its peculiar and apparently illogical innervation from the cervical segments of the spinal cord by way of the phrenic, and from the lower thoracic spinal segments by way of the intercostal nerves. By means of this peculiar innervation and the reflex arcs thus established, the diaphragm is enabled to act coordinately with the viscera innervated by the splanchnics and with those innervated by the vagus and certain other cranial nerves and with the cervical nerves. The complexity of development and innervation is directly related to the multiplicity of the functional relations of the diaphragm.

The manner in which the structural relations of the diaphragm facilitate respiration for the human race has been clearly described by Dr. Peckham.

The movements of the diaphragm, seen by means of the roentgen ray, are beautifully distinct. The central tendon is forced downward and the shortening of the muscular portion draws the diaphragm from the ribs, so that the lungs may slip gently into the space thus provided. The liver and the stomach are thus subjected to considerable pressure.

Dr. J. Strothard White of Pasadena, has permitted several of us who are interested in the diaphragm to study its action in his laboratory, and he has arranged for us to see several interesting patients. These included one whose left phrenic nerve had been sectioned, one with recent pleurisy with adhesions, one with unusually severe visceroptosis and epilepsy, and several normal persons.

The action of the diaphragm is not essential to respiration, because it is absent in non-mammalian vertebrates. Its functional value is not limited to respiration because it exercises several other useful functions in connection with its respiratory activities.

Somewhat less frequently emphasized than its respiratory functions is its place in facilitating the circulation of the blood. By means of its rhythmic activity the relation between the intrathoracic pressure and the intra-abdominal pressure vary considerably in a series of frequent alternations. The entrance of the blood into the thorax from the abdomen through the great vessels is thereby alternately impeded and hastened. The diaphragm is in this way an adjunct to the heart.

The circulation through the liver is maintained under certain conditions which would seem, at first view, to make for inefficiency. The portal circulation presents many problems. The hepatic circulation is facilitated by means of the alternate pressure changes produced by diaphragmatic action. The intimate attachment of the liver to the diaphragm enforces the circulatory effects of the respiratory movement and no amount of visceroptosis enables the liver to be freed from this structural and functional relation. This intimate association has its dark side, since infectious agents and malignant cells are thus enabled to pass from the liver into the thorax rather easily. This matter is often less serious than it seems, because when cancer reaches the part of the liver in contact with the diaphragm its rapid progress is kindly to the patient. And sometimes a hepatic abscess can be drained more efficiently by way of the thorax, for this reason.

The circulatory relations of the other abdominal viscera with the diaphragm are somewhat less vigorously enforced than is the case with the liver. The spleen, stomach, pancreas and intestines are variously and indirectly associated with the diaphragm, and the respiratory movements of the diaphragm exert a gentle and constant series of alternations of pressure in these tissues. The effects of such pressure alternations are evidently beneficial in normal circumstances, and in abnormal circumstances they may be useful in

promoting recovery. In other circumstances diaphragmatic movement increases pain, promotes the extension of infection and malignancy and facilitates increasing formation of scar tissue. Rest of the diaphragm due to reflex or to voluntary control is fairly common in such cases.

The place of diaphragmatic action in increasing abdominal pressure under nonrespiratory conditions is evident. Vomiting, defecation, parturition and several other functions are all, under either normal or abnormal conditions, facilitated by diaphragmatic action. An interesting relation in this connection is found in the forcible contraction of the diaphragm in constipation. The increased intra-abdominal pressure and the sudden relief of that pressure thus secured must be important in changing the blood content of the digestive viscera, in enforcing speedy discharge of the digestive fluids, and in relieving stagnation of the abdominal viscera generally. For these reasons it may not be too far-fetched to consider the diaphragm an adjunct to digestion.

After laparotomy, in an anesthetized animal, peristalsis is clearly visible. When the abdominal viscera remain normally related to the diaphragm, even after the removal of the pressure caused by section of the abdominal wall, the activity of the diaphragm can be seen to cause considerable movement of the intestines, a continual shifting of the loops which facilitates the passage of the contents from one part to another. This is most easily visible when there is much gas present within the intestine, or when some stain has been injected into the intestinal cavity.

In animals which have suffered from certain vertebral lesions, the intestinal wall is somewhat atonic, gas is present quite freely, and peristalsis is slower than normal. After laparotomy in a lesioned anesthetized animal, the ileum and jejunum are found dilated with gas, moderately congested with blood of rather venous tint, and showing slow and feeble peristalsis. The respiratory contractions of the diaphragm cause quite an efficient movement of the intestinal contents under such conditions. If, in such an animal, the intestines and the stomach are allowed to drop slightly away from the diaphragm and liver, so that the effects of diaphragmatic action are less marked, the intestinal contents almost or quite cease moving. The very slight change in position necessary to interfere with the effects of the diaphragm could not cause the change in intestinal conditions, for similar or even more marked, changes in the position of the bowel which do not modify the effects of diaphragmatic action also fail to cause the same cessation of movement in the intestinal contents. Thus it seems that the diaphragm may act as an adjunct to peristalsis.

The conditions observed in lesioned animals suggest that diaphragmatic activity may be one factor diminishing the influence of certain vertebral lesions which interfere with normal peristalsis. The increased rate and depth of respiration in certain forms of intestinal toxemia, and the frequent sighing which so often accompanies this condition thus must have beneficent effect upon the intestines as well as the liver. It is self-evident that the action of the diaphragm is not completely efficient in any recognizable cases, because if diaphragmatic action, or any other compensating mechanism, should be completely adequate no symptoms would be recognizable. However, it may be that occasional cases of known intestinal torpor unaccompanied by evidences of toxemia may owe their lack of serious symptoms to some such adaptive activity as this.

The action of the diaphragm in sneezing, sobbing, laughing, coughing and hiccough exerts some beneficial influences, and some not so good. The respiratory movements, in these acts, may clear the nasal and pharyngeal passages. The action of the diaphragm, at the same time, exerts in an intensified manner the effects produced by ordinary respiration on the circulation of the blood and the functions of the abdominal viscera. "A merry [laugh] doeth good like a medicine," partly because the contraction of the diaphragm is thereby increased and repeated. Even people who sob are better rather than worse for the diaphragmatic action so caused.

In the respiratory control associated with emotional expression the diaphragm is of considerable importance. Among our earliest memories is "The Night Before Christmas" and the saint whose "round little belly shook when he laughed like a bowl full of jelly". Anger contracts the diaphragm; gentleness relaxes, but permits easy respiratory movements. Scarcely ever is an emotion expressed without the help of the diaphragm. The nervous control of the diaphragm renders it especially efficient in the expression of emotional states. The respiratory centers receive nerve impulses from the red nucleus and other basal ganglia. The upper cervical centers, from which the phrenic nerve is derived, receive other streams of these impulses. It is by way of these nervous connections that emotional states affect respiration, and because of the double supply to the phrenic, the diaphragm is by far the most energetic of respiratory agencies for the expression of emotions.

The diaphragm, being also under direct volitional control, is one of the most effective tissues for the control of these emotions. To empty the lungs of air, to relax the diaphragm, to force it into slow, even, regular, activity, is to see unwelcome emotional states fade away. This is not emotional repression, it is emotional control.

Emotional repression is associated with inactivity of the diaphragm, either in a condition of relaxation or of contraction, and this is very rarely a wise thing to do. Much has been said and written about the evil due to the repression of emotions. There is no good to be said for that method of avoiding undesired emotional tendencies. But with controlled movement of the diaphragm in long, slow breathing, emotions also can be controlled, which is a desirable thing in every way.

These things are not often discussed, but they are commonly employed in the ordinary habits of normal, sane living. No proof is necessary; emotional customs are not commonly susceptible to proof. It may not be too emphatic to say that from these, and other similar observations, it may be said that the diaphragm is an adjunct to the cerebral cortex in the maintenance of self-control.

These varied functions are performed by the diaphragm by means of simple movements, controlled by the nerves already mentioned, the phrenic, the vagus, the intercostal. These are controlled by a group of centers within the medulla. From the respiratory centers descending impulses pass downward within the spinal cord (fasciculi propria), to the intermediolateral cell group of the second, third and fourth

cervical segments (from which they are carried by way of the phrenic nerves) and to the anterior horn cells of the thoracic spinal segments (whence impulses are carried by way of the intercostal nerves) and to the centers of origin of the facial, vagus, hypoglossus and spinal accessory nerves. Impulses to and from the respiratory center and the centers which control the blood pressure, heart's action and several specific respiratory activities are known to occur, though the exact pathways are not yet distinguishable. The functional intimacy of the peripheral relations of the phrenic and the vagus are associated with an equally close relationship in the medulla. The respiratory center lies so near the vagus center, at the tip of the calamus scriptorius, that for a time they were considered to be identical.

The respiratory centers and the vagus centers, are bilateral, but the two halves are closely related by associational fibers. If medial section be made, the two halves act synchronously so long as the conditions remain normal, or approximately so; but when the movements of either side of the thorax are interfered with, the action of the two sides may become asymmetrical.

The action of the respiratory center depends largely upon the character of the blood circulating through it. A lack of oxygen causes increased respiratory movements, but a very small increase in carbon dioxide causes greater increase in the movements. Acids, fatigue products, toxic products of bacterial action or of intestinal putrefaction may increase the activity of this center in a beneficent manner.

Nerve impulses affecting the center are carried to it as follows:

Descending impulses from the cerebral cortex bring the respiratory movements under a certain amount of volitional control. This control is bilateral.

Descending impulses from the basal ganglia cause the respiratory movements to be affected by the emotional and instinctive activities.

Stimulation of the superior laryngeal nerves initiates expiratory movements. The irritation of the laryngeal membrane, under ordinary conditions, causes a cough. This respiratory act is modified by the simultaneous occurrence of the reflex actions of the glottis and the respiratory movements of forced expiration. A separate center for coughing is recognized.

Stimulation of the glossopharyngeal nerve, either at its center, its root, or the area of its distribution, causes the inhibition of the respiratory movements. The value of this reaction is apparent in the swallowing reflex.

Stimulation of the area of distribution of the trigeminal nerve may be followed by a sneeze.

Stimulation of the sensory nerve endings in the skin stimulate inspiration. Excessive stimulation of the skin areas may cause painful forced contractions of the inspiratory muscles, with partial suspension of the respiratory movements. The occurrence of syncope in such cases permits the return of the normal respiratory movements.

Stimulation of the vagus nerve, within the abdomen, causes forced expiration.

The activity of the respiratory center at any time is determined by the quality and the pressure of the blood flowing through it, especially with reference to the partial pressure of its carbon dioxide content, and by the algebraic sum of the nerve impulses reaching it from the peripheral nerves, the cerebrum, the basal ganglia and the associated medullary and pontine centers.

The development of the diaphragm shows a complexity which is quite puzzling. Broman describes four sources, to which Sarden adds a fifth. These sources include various derivatives from the septum transversum, a mass of mesoblastic cells first seen opposite the upper cervical spinal segments, from which the mesoblastic elements of heart, liver, and other viscera are derived, cells derived from the fifth cervical myotomes, and cells growing inward from the body wall.

These developmental relations explain how the phrenic nerve, derived from the upper cervical spinal segments and associated with the nerve centers in the medulla, has been carried so far from its origin into the adult diaphragm, and how it is that the intercostals and the sympathetic distribution are associated with adult thoracic spinal segments and all unite in the nutrition and the control of this great muscle.

The diaphragm helps us to breathe, helps us keep the blood in circulation, helps us to overcome intestinal toxemias and atony, helps us to digest food and eliminate waste, helps us to express hate and anger and love and kindness, and helps us to control these sometimes useful emotions. If we understand the functional value of the diaphragm, its correct management enables us not only to continue to live, but to live efficiently and at peace with ourselves if not always at perfect peace with our fellows.

Again the words of Dr. Still recur to mind. "The diaphragm says 'by me you live and by me you die. I hold in my hands the powers of life and death. Acquaint now thyself with me and be at ease.'"

Diagnosis by Osteopathic Lesions*

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Any survey of scientific evidence which supports osteopathic principles of diagnosis and treatment is worth while study for an osteopathic physician. Such surveys are not only informative, but also encouraging. The particular phase of the subject to be considered here is Diagnosis by Osteopathic Lesions.

When this subject was assigned, it was interpreted to mean that the program chairman wished to have a survey of the scientific evidence which shows that osteopathic lesions are a reliable guide in the diagnosis of disease. The subject has been dealt with accordingly.

The available material which proves osteopathic diagnosis may be grouped into three divisions:

I. Clinical experience and study within the osteopathic profession;

II. Observations by outsiders on the phenomena of referred pain and reflex contracture;

III. Physiological research into the reactions of the nervous system.

The clinical value of osteopathic diagnosis is known to every osteopathic physician who has relied

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on lesion findings as an important guide in diagnosis and treatment.

The palpation of spinal tissues and reflex centers tells volumes to the trained technician. The ability to do intelligent palpation comes only from experience, practice and application. It is not quickly nor easily acquired, and the degree of ability varies with the individual. Medical diagnosticians are not trained to attach importance to, or to examine, spinal tissues in their diagnostic work. Consequently, they are skeptical of its value. Perhaps the same reason is responsible for the lack of appreciation of the value of osteopathic diagnosis sometimes encountered among individuals who are not officially in opposition to osteopathic ideas, as are the medical men.

Clinical experience, gathered over a long period of time, by careful observation, is a reliable scientific test. The most perfect theories and the most technical laboratory investigations must prove themselves clinically before they can claim to be scientifically established. Diagnosis by osteopathic lesions, in the experience of many different individual investigators, has established itself clinically.

The scientific progress of osteopathy in the future depends primarily on a better recording of the clinical observations just mentioned. We, as osteopathic physicians, know what can be done through osteopathy because of our own experience and the experience of men in whom we have confidence. The tabulation of these osteopathic results has not been well done, and with very few exceptions, is not in a form that will carry much conviction to an impartial observer. Perrin T. Wilson has done some valuable work in this respect, and S. V. Robuck has presented to this convention an interesting study of obstetrical records from osteopathic institutions and private practitioners.

In clinical work in the Chicago College of Osteopathy, the osteopathic examination is made by a physician who has no knowledge of the history or physical findings of the patient. It is the purpose of the clinicians to bring out from a study of a volume of case records, the constancy of the osteopathic findings in diseases of various structures of the body. This work, at the present time, has given some interesting results in the uniformity of spinal findings, in localized areas, in kidney diseases and in other diseases. The study is confined to areas of spinal involvement, and no attempt has been made to classify types of lesion. There are difficulties yet to be overcome in minimizing errors of palpation.

The work has brought this positive result: The clinicians are able to rule out, with reasonable certainty, the presence of pathology in any structure whose direct reflex spinal connections show no contracture.

The importance of this type of clinical research cannot be overemphasized.

REFERRED PAIN AND REFLEX CONTRACTURE

Hilton, Head, Mackenzie, Pottenger and others have made a special study of referred pain and reflex contracture. The studies of these men are directly applicable to osteopathic diagnosis, and substantiate osteopathic theories by independent and disinterested investigations.

The studies in referred pain may be briefly summarized by the statement that pain from an area of low sensibility is referred to an area of high sensibility.

Visceral nerves have a relatively low sensibility in comparison with the more highly specialized peripheral and skeletal nerves.

The mechanism of referred pain is considered to be an overflow of stimuli, coming over visceral nerves, into other nerves connected with the same spinal segment. The phenomenon of referred pain proves conclusively the close relationship between the skeletal nervous structures and the nerves supplying the viscera. Osteopathy is based on this relationship.

For use in diagnosis, the referred pains and areas of hyperesthesia are particularly valuable. The hyperesthesias produced by visceral disease are most readily detected as points of spinal tenderness. Spinal tenderness is present in nearly all visceral disease and is of sufficient frequency to be a reliable diagnostic finding. It is relatively less important than reflex contracture.

Reflex muscular contractures are considered in every text on surgical diagnosis, and have been included in the studies of the men mentioned in connection with referred pain.

Referred pain establishes the fact that nerve impulses are transferred from visceral to spinal nerves and vice versa. The presence of reflex contractures (again observed by independent investigators) shows that sensory impulses coming from disturbed viscera can overflow in motor nerves supplying skeletal muscles.

We can confidently state that abnormal nerve impulses passing through a spinal segment for any period of time, alter the tensions of the spinal musculature. The intrinsic muscles of the spine react first, extrinsic muscles less rapidly, to any abnormal change in the nature of the flow of nervous impulses through particular spinal segments which innervate those muscles. The sensory impulses coming from visceral pathology constitute an abnormal flow and result in a change in the tension of spinal muscles. This changed tension in spinal muscles is reflex contracture, and is a constant and infallible part of osteopathic diagnosis.

The use that can be made of reflex contracture in diagnosis depends on the ability of the operator to detect it by palpation. To an experienced osteopathic diagnostician, the absence of characteristic tissue changes around the area of innervation of a viscus, rules out pathology in that viscus.

PHYSIOLOGICAL RESEARCH

Like osteopathy, referred pain and reflex contracture have been observed and established by clinical observation; they have not been developed in the laboratory. But it remains for the laboratory to explain them. The interesting work of the men studying nervous physiology has done much to clarify osteopathic ideas. Some of the outstanding men in this field of investigation have been Adrian, Sherrington, Gasser and Erlanger.

Sherrington has advanced an interesting theory of stimulation and inhibition. His hypothesis offers a good explanation of the overflowing of abnormal impulses from visceral to somatic nerves, and from somatic to visceral nerves. It explains why impulses coming from any diseased structure, whether that structure be visceral or skeletal, will spread out to and cause characteristic changes in other tissues in reflex connection with it.

The studies of Adrian on the nature of the nerve impulse and the basis of sensation, have shown that the beginning of an impulse in an ordinary sensory nerve depends on a mechanical change in the environment of the end organ. He believes that there must be some change in the amount of tension or pressure exerted on the end organ by surrounding tissues before a sensory end organ is stimulated to begin an impulse. He has measured the changes in the rate of flow of nerve impulses coming from tissues placed under varying degrees of tension or pressure. Osteopathic pathology is primarily mechanical in nature, and this explanation of the origin of sensory impulses is particularly applicable to what we know of osteopathic pathology and diagnosis.

Other important findings dealing with synapsis, size of fibers, fatigue and rate of impulses can only be mentioned. They are detailed in *The American Journal of Physiology*, in "Applied Physiology" by Samson Wright, and in "Recent Advances in Physiology" by Evans.

The physiology of the nervous system as yet offers many unsolved problems. While there is much work yet to be done, research in this field has helped materially to put osteopathy on a sound scientific basis. Each advance in our knowledge of the nervous system is a step forward in our understanding of osteopathic principles.

SUMMARY

It has only been possible to mention some of the things that prove the value of diagnosis by osteopathic lesions. A detailed discussion of any of them has not been attempted. Diagnosis by the interpretation of spinal findings is as unique and distinct a part of osteopathy as is osteopathic treatment. Its study in the three general ways outlined will do much to establish osteopathy on a sound scientific basis. The study includes the keeping of accurate case records, careful palpation and observation of spinal tenderness and reflex contracture, and the interpretation of research findings for the explanation and corroboration of osteopathic pathology.

Intrapelvic Technic in Dysmenorrhea*

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In presenting this paper, I do not imagine for a moment that I am giving any startling information to most of our older practitioners. I come rather with the hope and belief that I shall be of some assistance to the later graduates just going into the field, and those who have been but a short time in practice, by stating the results of fifteen years experience and close observation in the treatment of certain cases of sterility, and of menstrual disorders generally, by the bimanual method, or what is known as "intrapelvic technic."

In attempting this work and expecting to secure satisfactory results, one must first satisfy himself on two or three points: First, that a uterine malposition may easily be the cause of sterility, dysmenorrhea, or in fact, of any menstrual abnormality; second, that such malpositions respond quite readily to bimanual technic, and third, that unless we find definite contra-indications, the bimanual method is the method of choice, by all means. Contra-indications are: (1) Definite adhesions, which hold the uterus firmly fixed; (2) tumors; (3) acute inflammatory conditions (salpingitis, metritis, etc.); (4) the presence of gonorrhea; (5) marked cervical erosion; (6) extensive cervical laceration; (all of which must receive the appropriate treatment indicated); (7) early pregnancy, which might not be recognized and might lead, if one were careless, to a mistaken diagnosis.

Let me here make myself perfectly clear on one or two points. I am not claiming that a uterine malposition is *always* the cause, or is the sole cause of dysmenorrhea. There are several other factors to be considered. For instance, lesions of the lumbar spine; sacroiliac strains—acute or chronic; inflammatory conditions of the ovaries, uterus, or adnexa; ovarian dysfunction; infantile or undeveloped uterus, and possibly certain constitutional diseases, especially those involving a disordered condition of any of the ductless glands, such for instance, as goitre. All these are doubtless factors of immediate concern in the consideration of dysmenorrhea, but are not within the province of this paper. So we will pass along and deal with what I consider one of the two outstanding causes of dysmennorhea—uterine malpositions. The other outstanding cause, in my opinion, is the presence of sacroiliac and lumbar lesions.

I think it will hardly be denied that the majority of young women suffer to a lesser or greater degree from some disorder of the menstrual function, ranging from a discomfort so slight as to be almost ignored by the individual, up to a degree of severity, which eventually forces her to seek relief. In my own experience if the individual (or her family) has had no previous experience with osteopathy, they will invariably go first to some physician of the older school, either their own family doctor or one to whom they have been recommended. This doctor will follow the usual routine of uterine sedatives, which of course are only palliatives, and cannot possibly remove the cause. Then he will usually resort to the use of gland therapy of one make or another. Finding most or all medication ineffective, an operation will be advised, first a dilatation of the os, or the use of a pessary, and finally a suspension operation, which last may (probably would) give relief, but is entirely unnecessary, unless there had been adhesions, causing an immovable, retroflexed uterus, or a complicating tumor; in which case, an operation only would be of value, of course.

Let me emphasize that our whole procedure presupposes a correct diagnosis. I do not claim to make an absolutely correct diagnosis at the first examination, and I am not including those cases of prolapse of the uterus, which are due to perineal laceration; the need for operation is here quite

*Read before the Thirty-fifth Annual A.O.A. Session, Seattle, 1931.

clearly indicated and promptly recommended. Frequently, however, one can not determine at the first examination whether there is a fixed uterus or not; our diagnosis may be interfered with by a thick abdominal wall (possibly fat); by a marked tenderness at first examination, by a sort of "compactness" and rigidity of the pelvic tissues—and so on. On the other hand there are cases where an immediate and definite diagnosis can be made, as to the position of the organ.

Now, theoretically at least, we may have any one of eight or ten different malpositions. So as to avoid confusion later I will name them: Retroflexion, right lateral, left lateral, retroversion, anteflexion, anteversion, left oblique, right oblique, left torsion, right torsion, and of course, straight prolapse, mentioned before. Theoretically, too, one might find any combination of these malpositions.

I should like at this point to say that I have never seen this position of "oblique" left or right mentioned in any text, nor have I heard of its being described before. But certainly in my own practice I have come across three or four such unusual positions where the fundus was lying well over to the right or left with the cervix held more or less tightly over to the opposite side, usually the cervix drawn over to the left.

Having determined accurately what the malposition is, in the case under examination, and knowing the normal position of the uterus, the corrective technic should suggest itself. The operator (right-handed we will assume), stands on the right side of the patient, who is in the dorsal position with both knees fully flexed. The fingers of the left hand are placed a little above the symphysis pubis, to fix and otherwise control the fundus, while the index finger, or preferably the first two fingers of the right hand, are inserted into the vagina, to move and control the position of the cervix. These fingers are or course, placed well into the fornices, posterior, anterior, or lateral as the case may require. I find that a retrodisplacement (flexion or version) is the most common malposition of all, so we will describe the technic for retroflexion.

With the two fingers inserted well into the posterior fornix, an effort is made to press upward and forward on the body of the uterus which will be felt lying posteriorly, in the culdesac of Douglas. When this is properly accomplished (provided no adhesions are present, otherwise it can not be done) the fingers of the left (or abdominal) hand will feel the fundus rising, and can then grasp it and bring it forward toward the symphysis. At this stage the vaginal fingers are brought forward into the anterior fornix, and used to create pressure downwards and backwards on the anterior lip of the cervix. Downward pressure on the cervix, and the forward pull, or lift, on the fundus through the abdominal wall are maintained, for as much as the patient will stand comfortably without pain being inflicted. Of course the finger nails on both hands must always be closely filed.

To describe in detail the technic for each malposition would take too long and be wearisome. As I have said before, one must have a definite knowledge of the correct (or what is regarded as the normal) position of a normal uterus and then make reasonably sure of his diagnosis as to what malposition exists. Beyond this a little practice, and an ability to visualize what he is trying to do, will soon enable one to develop his technic.

In an anteposition we should have no difficulty whatever, either in making our diagnosis or in correction. In the first place, with this malposition, the patient almost invariably gives a history of frequent desire to empty the bladder, especially at the menstrual period. The reason for this is obvious. The fundus of the uterus is resting on the bladder and creating pressure, which is increased at menstruation, due to the engorgement of the organ. In an anteflexion, the fingers inserted just behind the symphysis, and pushed in an upward direction (towards the operator) will readily find the heavy mass resting on the bladder; while the cervix will be found in an almost normal position, but slightly back. In an anteversion, one can scarcely reach the cervix, it being so far back in the vaginal canal, almost pointing towards the lower sacral segments or coccyx. To the fingers the position of the body and fundus will be in approximately the same position in both anteflexion and anteversion. The corrective technic certainly suggests itself. One should push up and back on the body of the uterus, away from the bladder, then holding it firmly with the abdominal fingers, the vaginal fingers are moved well back into the posterior fornix to pull the cervix well forward, the backward push on the fundus of the uterus being continued.

I have purposely kept away from a discussion of the anatomy of the pelvic structures and their nerve and blood supply because these can readily be reviewed by anyone interested, and would here take up a deal of time.

It would be well, however, for me to point out this much, that dysmenorrhea due to malposition can readily be appreciated if we keep in mind that the folds of peritoneal covering of the uterus, which on each side form the so-called "broad ligament", contain within themselves both the ovarian and uterine arteries, which anastomose and form "the circle of Robinson"; and any position out of the normal into which the uterus might be thrown must necessarily place more or less of a bend or fold in this broad ligament, thus immediately interfering with proper blood supply and drainage, by creating a "kink", so to speak, in the blood vessels. Thus we have—what anyone would expect—a passive congestion; which must affect function, as we all know.

The correction of these malpositions, then, is comparatively easy, and the results certain. I must warn, however, that most of these cases take time, and I make it a point to tell patients so. I have seen some cases respond nicely in ten or a dozen treatments, quite a few in fact, and on the other hand, I have seen a few which took as long as fifty or sixty treatments. These, however, are extremes; the majority will respond in perhaps twenty-five to thirty treatments, giving three treatments a week at first, and two each week after the first four or five weeks. The length of each individual treatment will be determined largely by the individual case, and the condition present. If the uterus can be easily "grasped" between the abdominal and vaginal fingers, then effort at replace-

ment may not extend over two to three minutes; in more difficult cases a longer treatment may be indicated, but never over four or five minutes at most. All of this may seem tiresome to some who want quick action; but certainly it is far preferable to an operation which may or may not cure, and is accompanied by risk and the necessity of hospitalization with its attendant expense and loss of time.

The main object of this paper is to draw the attention of those who have overlooked it, to the following facts:

(1) Dysmenorrhea is a most common condition.

(2) The majority of cases are due to mechanical obstruction of circulation, and therefore will never respond to drug treatment.

(3) Dilatation and curettage are in such cases unnecessary, and worse than stupid procedures.

(4) The use of a pessary is frequently harmful, and will not cure the condition.

(5) A major operation (laparotomy) is uncalled for, and creates the risk of adhesions where none existed before, to say nothing of its other drawbacks.

(6) The cause is purely mechanical, and remedial by mechanical measures, which, though somewhat slow, are certain, and will never do harm.

I have not discussed the causes of these malpositions, and at best we can only theorize. However, there can be little doubt that falls on the sacrum or ischii, previous inflammations, intra-abdominal pressure from above, debilitated conditions generally, getting on the feet too soon after parturition, all play a part, and we will let our etiology "go at that", since the technic and results will not be influenced in any way. In closing I would like to make one or two quotations from recent medical sources, but before doing so let me add, that I do not, in any case, overlook the possibility of sacroiliac or lumbar lesions. A great many of my cases have been cured of dysmenorrhea through the correction of a sacroiliac lesion, no intrapelvic work having been attempted. I always do the simpler thing first. Only when I find no lesion at all, of the bony structures, and a definite uncomplicated malposition, do I advise the intrapelvic technic. The reason is plain.

The doctor should not attempt to rush a procedure which most patients will not any too enthusiastically agree to, and which might not give the results they may be led to expect. He should be cautious, be reasonably certain of each move, be sure and let the patient know that she will have to exercise patience. He will then experience no great difficulty and few, if any disappointments.

"Treatment of Uncomplicated Displacement of the Uterus—

"It has been found that surgery does not provide symptomatic relief, it being usually futile and disappointing, if not even dangerous. Furthermore, the symtoms ascribed to simple displacements cannot be substantiated by experience. The round ligament operation is now employed only sporadically, and conservative therapy is being used more and more. The only type of displacement which justifies surgery is the large hyperplastic uterus, the large chronically inflamed adherent uterus, or the pathologic prolapsed uterus, where more surgery than simply shortening the round ligaments or fixing the uterus forward is required.

"Uncomplicated uterine displacements rarely require treatment, either medical or surgical. As to anteflexion, it seems physically impossible to correct an ill developed anteposed uterus by either surgical or medical means, as this is an incurable condition. In poor development of moderate extent, some good may be accomplished by a restricted dietary regime, combined with the use of organic drugs. Dilatation and curettage alone or combined with a uterine stem pessary or the various mutilating operations on the cervix itself, may occasionally provide some comfort, but these are often disappointing and not without harm to the cervical mucosa."

"Every retroversion, if it exists as such for a sufficient length of time, causes passive congestion of the pelvic organs; and histologic changes, dependent on venous engorgement, ensue.—Editor" [of "Practical Medicine Series"].[1]

322 Tegler Bldg.

Prevention of Acute Breaks in Compensation in Inflammatory Disease*

ALBERT M. WESTON, D.O.
Los Angeles

The offices of physicians are filled with individuals who suffer from recurrence of infection. The same applies to patients of dentists, who suffer from caries and pyorrhea. Contrast these with individuals who never suffer infection. The former group not only fall victim to infection for the first time, but also become subject to repetitions called relapses. We may mention rheumatic infection, tuberculosis, systemic pyorrhea, the common cold, and focal infection such as sinusitis, apical infection, and so on. Imagine the surprise of a physician who, when taking a history, finds an individual more than sixty years old without memory of a fever or an infection.

In the attempt to analyze why such differences exist, we use the terms inherited and acquired immunity. To explain the susceptibility of an individual to a disease we use the term diathesis. Years ago I heard the term in connection with tuberculosis; recently I have read the term in connection with nonspecific arthritis or rheumatic infection, by no less an authority than Ghrist and Hench of the Mayo clinic.

DIATHESIS EXPLAINED

Diathesis means an inherited or acquired lack of defense mechanism against germ activity. To quote the authorities just named, a rheumatic diathesis is a deficiency of the body, either inherited or acquired, against infection of the body in general and the joints in particular. If we can use the term

[1]Extract from Practical Medicine Series, John O. Polak, M.D., Professor of Gynecology, Long Island College Hospital, N. Y., 1927, p. 417.

*Read before the Thirty-fifth Annual A.O.A. Session, Seattle, 1931.

for rheumatism and for tuberculosis, then why not for the common cold and other infections in the course of which individuals suffer relapse? The term is merely useful to classify and to place in a group those who are subject to an infection, but it does not clear up the mystery of why such individuals do not recover, as contrasted either with those who never have an attack, or who recover and never relapse. Untrained writers, like Alexander Powell, have noted instances of inherited immunity. The Arab, he says, is not subject to zymotic disease, being able to drink water in the desert waterholes in which both man and camel stand, with perfect immunity. An European or an American would quickly succumb to fever if he did not carry bottled water across the Arabian deserts. We are all familiar with the fact that most people show, at autopsy, tubercular lesions in their lungs, never having developed the condition called clinical tuberculosis. So we recognize the fact of immunity as contrasted with the fact of diatheses, but these terms tell us nothing of what mechanisms are in disorder and why they are wrong, or how they can be corrected. Science is gradually unraveling the mystery. Is the osteopathic profession bearing a part in the solution of these problems?

IMMUNITY MECHANISM FINDINGS

Bacteriologists have unraveled a portion of the mechanism of immunity by the discovery of the various opsonins, antibodies, antitoxins which appear after combat experience with a germ in an individual. This is specific and may be developed by use of vaccines. Recently we have noted advances in the development of nonspecific therapy, or the usefulness of blood injections from father into the child suffering from infection, the use of secondary milk proteins in arthritis or with better results in acute pyogenic infection. In this type of defense mechanism we deal with enzymes which destroy foreign protein. A third portion of the defense mechanism lies in the normal balance of the blood with respect to p^H or acid-base balance; with respect to phosphorus-calcium balance and with respect to normalcy of all blood constituents. We have always talked about the rule of the normal supply of normal blood, but it has remained to the researcher to show just how these balances are disturbed in disease, and thereby to point the method of diet or of mineral injection which will make up the deficiency. The term diathesis will be less mysterious when biochemistry gives us these imbalance figures for the common cold and other infections.

Differential blood smears are helpful to study in both acute and chronic infection, and indicate the presence of apical and other focal infection where it might not otherwise have been discovered; they often indicate the phase of the attack and the severity of the invasion. Each type of cell passes through a curve because of infection; the polymorphonuclears reach a maximum in the combat phase if they are not suppressed in production by overwhelming toxic odds as in agranulocytic angina for example. Staphylococcic or new polymorphonuclears, are proportional to the severity of the infection. In pneumonia these forms may reach 70 per cent. The maximum point of the monocyte curve represents the conquering phase and may be missed for it is of short duration. The maximum point of the lymphocytes is reached in the convalescent phase. Lymphocytes in increased numbers mean chronic infection of which tuberculosis is a common example. It has been noted in recent literature that tuberculosis in an infant without immunity to tuberculosis can and does produce a polymorphonuclear cytosis. The white cells of the body play their part in body defense and studies are of diagnostic import as compared to studies in chemical imbalance which more or less automatically point out the proper corrective procedure.

Defense resistance further depends upon reserve capacity of all the organs, including the reticulo-endothelial defense, and a proper supply of the various endocrines as needed by the body. The thyroid, especially, plays its part during fever when the pace of heat production and metabolic chemicalization is speeded up.

Again proper protection of the vasomotors of the skin is essential by body insulation from cold wind and damp or sometimes from too much heat and dryness, e.g. protection from overstrain of this system by proper clothes, housing, ventilation and food adequate in its specific dynamic heat production.

Again a part of the defense against diathesis depends on the economic ability of the individual to avoid overwork, physical and mental, in the struggle for food; to provide funds for leisure to indulge in joy-giving sports, with adequate exercises in the open air. The cumulative fatigue that comes to the wage slave and the overworked osteopathic physician eventually weakens the protection against infection. Worry, overwork and rapid eating are poor hygienic conditions often selfimposed by those who, if they knew the game of golf or some substitute therefor, might otherwise enjoy life and thereby retain their vital resistance.

In patients with a tendency towards relapses the question of prognosis is important; especially is this true in tuberculosis and nonspecific arthritis. A patient naturally desires to know when he will be well and how he can retain what he has gained. If he is not made to understand the liability to relapse and some of the causes therefor he may become discouraged and abandon treatment otherwise logical and helpful. What are the causes of relapses in the minds of the patients; in the minds of observers?

Mayo clinicians recently studied thirty-five cases of nonspecific arthritis. Out of twenty-five questions with respect to predisposing causes the following factors were disclosed; nine attributed their breaks in part to constipation, eight reported intercurrent infection in the upper and lower respiratory tracts, usually colds or grippe; exposure to cold, or to cold and damp appeared eleven times; overstrain—physical seven and mental five; dietary indiscretion four; trauma four and endocrine one. Compare these findings with thirty-six cases of common cold studied by myself. Twenty-three were definitely associated with strain of the superficial vasomotor system because of rainy weather or of chilling the body or because of wind storms. Ten were wage slaves with long hours and confining indoor work, and seven were subjected to financial worry or grief. Seventeen reported constipation. Chronic infection, most often nasal catarrh, but sometimes phthisis, prostatitis, colitis or apical in-

fection existed as a predisposing drag somewhere in the body. Dietary imbalance was noted in six and glandular imbalance existed in three. By way of summary there seem to be four predisposing causes:

(1) Fatigue from over-physical exertion, or mental strain, or both.

(2) Sudden weather changes, or otherwise chilling of body by cold and damp.

(3) Constipation and dietary factors, indiscretions, etc.

(4) Intercurrent infections, including presence of chronic foci.

These four are named in order of their relative frequency. Glandular disturbances are noted by physicians to play a distinct though minor role. Lack of sleep, of sunshine, and of fresh air seems of some importance. With respect to tuberculosis the same predisposing factors are important. The need for rest in tuberculosis is axiomatic. Light, non-constipating diets are productive of greater numbers of cures than overfeeding in tuberculosis.

Hot, dry weather or cold, dry weather is an important factor in treatment of tuberculosis. There are less tubercular sufferers in Alberta, Canada, than in any other part of North America. Dry, hot, Arizona is famous for its benefits to tubercular sufferers.

It has been brought to my attention in several cases that it is possible for a case of pulmonary tuberculosis to have infection elsewhere, the removal of which is often necessary before routine treatment of disease will make any progress. One must not allow the idea of tuberculosis to shut out the possibility of focal infection, such as in the gall bladder. At any rate, the parallelism between the causes of recurrence in arthritis and in the common cold is suggestive that these conditions may be different phases of rheumatic disease. In one the joints are involved, in the other the lymphatic channels of the body only are infected. The same group of germs may be working in each case. In only four of the thirty-six cases of common cold were the lymphatics not palpably involved. Were these four vasomotor rhinitis cases?

The marked effects of sympathetic nerves may be noted in cases of ganglionectomy for arthritis. The swelling, sweating and coldness quickly disappear. One such case was no longer influenced by weather changes. Further study along this phase is indicated. Certainly osteopathic manipulation depends for its success largely on the fact of normalizing physiology through the vasomotor reflexes. It is a means of producing rest, in which condition only can the body react with healing and repair. I have so often noted the usefulness of manipulative treatment where continued formation of toxic waste and acidity overbalance the picture. Contrariwise, I have noted that an osteopathic treatment of a hale and healthy person can produce no benefit since he is already enjoying a normal physiology.

Let us study cases of relapses in arthritis as assigned by physicians. Tendon strains, barometric changes, reinstatement of general diet where carbohydrates have been removed, improper timing and dosage of vaccines, tonsillitis, pharyngitis and prostatitis have all been mentioned. These can mostly be grouped under the four great heads already classified. Cold, dampness, wind, more rarely dry or moist heat and gastro-intestinal disturbances have also been noted by various physicians.

BIOCHEMISTRY OF THE BLOOD

Recently Harold F. Hawkins, D.D.S., Los Angeles, has shown the relationships between caries, pyorrhea and chronic infection and the biochemistry of the blood. He says the factors which create an alkaline urine and an acid saliva are an acute or pronounced chronic infection, often pregnancy, the consumption of high cereal or grain diet, and the regular use of magnesium salts. In caries he finds blood serum high in calcium, and low in phosphorus; in pyorrhea the blood serum is low in calcium but high in phosphorus. If these statements are true it becomes apparent that such studies should be made in a survey of other infections, comparisons should be made between the analyses in those undergoing broken compensation and in those who are normal. Hawkins has proven on large numbers of cases that he can restore the acid-base balance of the blood and change from low calcium to normal, or from high calcium to normal by regulating the diet with respect to its calcium and phosphorus values. What are these balances in common cold relapses and in arthritic relapses? The researcher and not the clinician must answer.

In production of immunity against inflammation, i.e. pyorrhea, he says we are dealing with three factors—the amount of calcium, of phosphorus, and of potassium, all of which combine to form monobasic phosphates (acid)—and the dibasic phosphates (alkaline) the relative percentages of which largely determine the p^H of the blood. The potassium-sodium balance becomes a factor, since excess of soda drives out potassium and disturbs the ratio of the two salt types mentioned above. Individuals whose urine is alkaline and whose saliva is acid and whose blood serum is high in calcium, can be corrected by removal of focal infection, by removal of high grain feeding and insuring sufficient amounts of phosphorus to carry the calcium into the urine thereby acidifying the urine through the eliminated monobasic phosphates. In pyorrhea, high calcium feeding with reduction of monobasic phosphates is necessary. Hypertrophy and inflammation tend to disappear as the p^H of blood becomes alkaline, i.e. greater than p^H 7.0. It is studies of this kind which really explain diathesis, and the elusive factors of resistance. In tuberculosis calcium has been injected with the idea of overcoming deficiency in this mineral and providing sufficient lime to complete the cure of the disease by the process of lime incarceration of tubercular lesions. Maurice Decker assures me that he has been able to demonstrate increased lime deposits in tubercular persons treated by this method, by comparative studies of x-ray films of lungs over periods of time.

By way of summary, the old formula, that infection varies inversely with resistance and directly with number, virulence and toxicity of invaders, still applies. But when we study the causes of relapse or predisposing factors we find that we are dealing especially with resistance. Those with a diathesis have weaknesses of defense mechanism, which point to four chief causes; some constituting stress within the organism and some constituting stress between the organism and its environment.

How then can we improve resistance, thereby carrying out the osteopathic principle of aiding nature?

From the preceding it has been shown that raising the specific resistance by vaccines or by substitute therapy is logical, if it works, and it does sometimes. Raising the resistance by means of nonspecific protein therapy is logical and often of miraculous effect. Great strides are being made in the knowledge of how chemical balances are disturbed by infection and how they may be corrected.

Regarding constipation, certainly many suffer or think they do from this disorder. My experience with bulk feeding leads me to believe that it is usually lack of dietary balance with respect to bulk which causes constipation. Or to put it another way, many are not really constipated, but because of concentrated diets simply contain insufficient residue to produce regular actions of the bowel. Certainly the public needs much education along this line.

Regarding the weather changes, much can be said. Individuals who are below par because of chronic disease certainly need proper clothing as well as proper calories to combat sudden stress on skin and vasomotor heat-regulating mechanism. In fact they need much more protection than they are willing to admit in mild climates where the tendency is to wear light underwear, disregarding entirely the quick changes in the wet season which produce much vasomotor strain. The old ideas of "Grandma" are still applicable, as is the Irishman's flannel. I allude to the subject of body insulation, and use cotton quilted vests for cases of chronic bronchitis; flannel around the kidneys in chronic glomerular nephritis, and wool stocking around the neck in case of the common cold. Protection in the former prevents relapses for years even if the chronic condition remains, and it helps to cure and prevent relapses in the common cold. We can aid nature and aid those with diathesis by insulation of the body against sudden changes of weather.

Where glandular imbalance exists there is a group of continuously increasingly effective products on the market. These substitution products, supplying to the organism substances which it cannot manufacture, are often strikingly successful in improving the resistance of a sufferer from glandular imbalance. These cases are not rare. They are just as much in need of early treatment as any other class.

Environmental factors such as overwork and mental strain, and too severe economic struggle I do not care to discuss since each doctor has his own idea about them.

Rest is achieved through osteopathic treatment, by virtue of the action on the nervous physiology of the patient. In toxic patients, especially where the toxemia is local, as for instance in cases involving the throat lymphatics, the muscles of the neck and shoulder girdle remain sore and tense, and produce lesions en bloc by their contraction. I think the toxemic irritation to the nervous system produces the lack of motion in joints; I know that repeated lesion correction does not cure, but once the cause is removed by removal of poison through drainage, cautery, tooth extraction, tonsillectomy, and so on, the neck musculature again becomes normal and lesions disappear. It is osteopathic to remove the cause; it is not osteopathic to correct lesions where the cause is not primarily mechanical, and where the mechanical faults are secondary to poisons and products of germ activity in diseased tissue.

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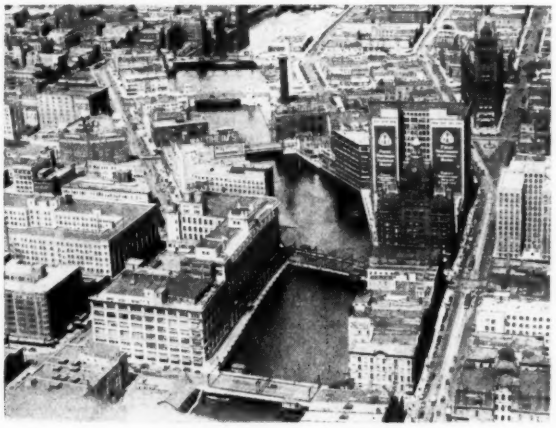

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THE DIAPHRAGM

The osteopathic study of anatomy and physiology is unique. It begins where many studies of these subjects cease. It is not content with an acceptance of the conventional considerations of the problems of structure and function, but analyzes them minutely to search out new applications of its underlying philosophy of etiology, diagnosis and treatment. The field that is open for this study is vast.

The articles on the diaphragm, appearing in this issue, illustrate a distinctly osteopathic approach to anatomy, physiology and treatment. Only osteopathic thought would trace the significance of the supports of the diaphragm through the pericardium, cervical fasciæ and vertebræ. Only an osteopathic student would sense the therapeutic possibilities of the diaphragmatic function accelerating venous and lymphatic drainage and develop a specific technic to utilize these possibilities.

The osteopathic contribution to therapeutics consists of a rational application of structural and physiological facts to the problems of health and disease. The diaphragm is a large circular muscle which is a major part of the respiratory mechanism and assists in the movement of venous and lymphatic fluids. Its principal attachments are to the thoracic cage, the lumbar vertebræ and the pericardium. So much is common knowledge. What a wealth of material opens up when its anatomical relationships are analyzed in terms of structural mechanics! What possibilities develop when its functions are stimulated by manipulation to meet the emergencies of failing vital mechanisms!

A general principle, capable of application to many problems of treatment, suggests itself from Dr. MacDonald's stimulation of the respiratory center by movement of the diaphragm. All motor impulses coming from a nerve cell or nerve center, are dependent on incoming sensory impulses for their origin. In many cases of embarrassed nerve cell activity, when local tissue conditions, particularly as in toxemia, inhibit nerve cell activity, a strong sensory impulse coming into the center will overcome the inhibition and stimulate the nerve cell or cells to resume, if only temporarily, their motor activity. This is in all probability the influence exerted by articulatory spinal and costal treatment in pneumonia. The vasomotor connector neurons in the dorsal segment are inhibited by excessive demands for functional activity and by the toxemia of the disease. Spinal treatment initiates a series of afferent impulses which stimulates the vasomotor mechanism to such a degree that the heart approaches its normal rate and strength of impulse and pulmonary circulation resumes its arteriovenous balance. The effect of such treatment on any reflex nervous mechanism is transient, the duration of the effect depending on the amount of toxicity present. Each time it is administered it builds up the reserve of the vital protective mechanisms of the body, and in many instances is the deciding factor which enables the protective mechanisms to gain control of body function. The case of bulbar paralysis illustrates this phenomenon clearly.

The intimate connection of diaphragmatic movement with so many vital functions of the body may be obscured by the simplicity of its chief function as a respiratory muscle.

R. N. MacBain.

PALPATORY DIAGNOSIS

The clinical inception of osteopathy originated from palpatory examination of the spinal and abdominal regions of a child suffering from dysentery; noting spinal soft tissue contractions, varied abdominal surface temperatures, and lumbar vertebral malalignments. Recovery followed correction of these abnormalities.

Palpatory diagnosis confirmed similar conditions in other dysenteric cases. Subsequently various bodily disorders were examined by palpation. And beneficial results were obtained by normalization of the deranged tissues.

Thus palpatory examination revealed a new field of diagnosis; phenomena were elicited different from those found by any other method of diagnosis. These clinical facts, which cannot otherwise be detected, demanded interpretation. They did not fit into the picture of preconceived theories of pathogenesis. In a word, a new aspect of structure was brought to light.

Structural change was found to be an essential part of the functional process. The association of the two, structure and function, depending on mutual interdependence, was shown to be a basic requirement of all like processes.

Dr. Still found no royal road to palpatory attainment. He devoted months and years, and many of them, to constant daily practice. In fact, he made the feel of tissue a part of every day routine, until it was actually a living issue, not something detached or isolated. The art of osteopathy is based upon nothing less than an exact and intimate knowledge of the tones and tensions of living structure and the reasons for them.

Dr. Still insisted that a light touch and gentle handling of the tissues develops the most skillful

and delicate sense perception. Just as soon as one employs heavy or harsh methods, conscious recording of the various shades of physiological reaction is lost. Each normal tissue, skin, muscle, fascia, ligament, gland, etc., has its characteristic feel when palpated, and an equally distinctive reaction when actively but lightly manipulated. And by virtue of the same, each abnormal tissue presents characteristic qualities. The complexity of these qualities constitutes a veritable maze to the novice.

Consequently there should be constant mental contact with the tissues through the tactual corpuscles, and interpretation, or else the feel of tissues will give but little reliable information; this is true of both palpation and therapeutic manipulation. Concentration and practice are the only possible means of attaining to any degree of skill. The importance of this part of osteopathic education cannot be overemphasized. It comprises no small portion of successful art.

It is possible that the refinement of the x-ray has tended to lessen the quality of palpatory effort. The x-ray can only be at best a very helpful supplementary measure. In the hands of a skilled osteopathic interpreter it is invaluable in certain cases; otherwise it may be misleading. The same may be said of laboratory diagnosis. But in any instance, there is always a world of tactual sensing to be recorded. In no other way can the various degrees of the tones and tensions, the mobility, elasticity, and resiliency, and the flexibility and extensibility of living tissues in their varied reactions, be noted. It is essential that the totality of pattern be elucidated. This recorded history is most significant.

It is well known that Dr. Still paid great attention to bony architecture, especially the mechanical form, plan, construction, and operation of each articular unit. This is inclusive of their levers and fulcra, muscular and ligamentous mechanisms, fascial encasement, and their nerve connections, lymphatic association, arterial supply, and venous drainage. Each articular unit is in a sense, a distinctive system of activity, though definitely correlated with all others. But there is plan, purpose, and beyond all an integrative contribution, in each combined structural and physiological group.

The status of each articulation system is an expression, at any given time, of the dynamic forces of environment reacting upon the body; an expression of the physical concrete, which also reflects its biochemical condition. Mechanical law constitutes no small portion of its operative procedure. The arrangement of the physical mechanism is the counterpart of the associated chemical action. Specific coördination of structure and function is the unit of operation, in which joint activity is indispensable, both locally and to the whole organism. The tactual sense is the one possible means of approach in order to discover the exact condition of skeletal tissue. The wide range of knowledge thereby obtained is a veritable treasury of information. But the tactual sensing must be efficient, and the findings analyzed and interpreted, before one can attain reliable information. Then the application of this knowledge will prove of the greatest possible importance for it is founded on a basic principle of health.

Disturbances of articulating bony surfaces are always significant. But the palpatory diagnosis should go much further if one is to obtain anything like a complete clinical picture of structure. Osseous framework provides a fundamental aspect from a certain viewpoint. But its observation *per se* may be far removed from the correct angle of clinical interpretation. The dynamic forces engaged act largely, pathogenetically, by way of the so-called soft tissue mechanisms. It is the complexity of these mechanisms which requires no little elucidation, and which challenges the very best efforts of the palpatory diagnostician.

Mention has been made of the necessity of the lightest possible contact when sensing the tissues. The sense of perception should not be dulled by heavy pressure. Care should be taken that additional sensory influences are not initiated. Everything depends upon careful, gentle, but deep, penetration of the tissues. The patient should thoroughly relax. The physician should have complete control of the field at all times. Every bit of conscious tension on the patient's part defeats these very purposes.

The various structural tensions of fascia, muscle, tendon, and ligament, tell a story of absorbing interest and of manifold information. A significant feature, often overlooked, is the elicitation of the small irregularities of abnormal structure which are frequently the very beginnings of irritations to nerves and of obstruction to vessels, leading to diseased processes.

Space permits reference to only two or three illustrations exemplifying the far-reaching importance of palpatory diagnosis. Careful training enables one to identify the status of the tonus and texture of the skin, which reflects to a certain degree the nutritional condition of the body; whether metabolism is normal, that is, nourishment sufficient and tissue elimination adequate. Then the feel of the skin gives a very helpful clue to the probable organic reaction to treatment. For not only is it a covering of the body but also its regulatory mechanisms through environmental influences are associated with both the superficial and deep systems of circulation. It is ennervated by the cerebrospinal and autonomic nerves. Hot and cold areas indicate underlying disturbance of circulation and nerve involvement. These are of value in locating structural abnormalities, especially regions of beginning involvement of mobility. The feel of the skin both generally and in circumscribed areas is an indicator of the effectiveness of treatment, not only in its temperature and sweat gland reactions, but also in its status of nerve irritability and character of tissue elasticity and contractility. The degree of vital reaction is commensurate with the efficiency of lesion correction and establishment of improved under-

lying physiological processes. This is most helpful in correctly timing and spacing treatment, so that there is neither insufficient treatment nor over-treatment.

The superficial fascia is closely associated with the skin. Circumscribed edema and relative acidosis are frequently located therein, involving also the subdermal lymphatics, being factors of the osteopathic lesion, and giving a distinctly doughy feel. This condition is not rarely a cause of the locating of toxins and infectious processes in certain regions. In such instances the nearby lymphatics may be involved, presenting a characteristic feel of involvement as well as enlargement.

The muscle feel gives a wealth of physiological and pathological information. Probably it is the most reliable structural index of body welfare. Muscle tissue is richly supplied with bloodvessels, an indication of its constant physiological importance. To enumerate its physiological activities would include, directly or indirectly, all vital processes. Its mechanical phases are of special interest, for they affect nerve impulse and circulation, and the chemism of the sarcoplasm. The balanced tonus of muscle is an adaptive mechanism intimately coördinated with environment and bodily activity. The feel of tone and tension is always outstanding, a registration of bodily condition constantly available. The local status of each segmental group, as well as configuration and equilibrium, may be revealed, which reflects direct primary injuries, and reflex phenomena from visceral functioning.

Muscle tones, contractions and contractures may be quickly identified, each presenting a characteristic feel, and each revealing an underlying feature of activity. The pathological field is no less characteristic than the one of normality, and the reactions elicited are directly related to the fields of etiology, diagnosis, prognosis, and therapy. Imbalanced tensions, due to inharmonious environment, are a prolific source of osteopathic lesions, which, of course, involve the entire segment. When these abnormal tensions are maintained, pathological contracture rapidly supervenes owing to the cumulative effect. Truly, palpatory diagnosis when carried to completion reveals a physiological vista that is commanding and clinically reliable.

Nothing is more important than to know whether the contracture is physiological or pathological. Then one should have a working knowledge that is able to detect the uneven resistance of deep muscular fibers, showing that fibrous involvement from excessive tension, edema, diapedesis, etc., has taken place. These of course are to be differentiated from the smooth, even but excessive contractions of the upper layers, covering several segments, owing to their widespread innervation, indicative of visceral reflexes. The visceral reflex may be, commonly is, superimposed on the same segment, presenting the two sets of muscular phenomena at the same time. Then it is not rare to find also a toxic type, with doughy, or leathery feel, complicating both of the above. These are illustrative of essential details that can be determined by careful palpatory diagnosis.

Perhaps a more striking illustration is the diagnosing of an edematous or even sclerosed disc. In certain instances it requires considerable ability to differentiate by palpation a deep-seated resistant fascia, due to hemorrhagic areas, from bony displacement. But in certain cases a really difficult problem to elucidate is to determine the component forces acting on an immobilized segment; remembering that pathological information is obligatory, for pathology characterizes many aspects of the lesion; in fact, the lesion is pathology.

The information to be obtained by palpatory diagnosis is practically unlimited, ranging from muscular tones and various physiological reactions to the mechanical arrangement of structure, and from local tissue consistency to the configuration and equilibrium of the entire organism.

Of all the tactual sensing, the one which requires the finest discriminatory ability, is the actual vital response or reaction of the tissues and whole body, wherein is expressed the status of the recuperative properties. This gives invaluable clues to prognosis, progress of improvement, and the efficiency of therapy. It reflects the sum total of the "fighting" qualities, the "come back," of the organism, which can frequently be sensed before the patient is cognizant of the impending change. This is part of the clinical sense to be attained only by considerable experience. It is a sort of a finished product of tactual sensing, combining all factors which enter into the art of osteopathic palpation* and technic.

CARL P. MCCONNELL.

"THEORIES MUST PROVE THEMSELVES"

"Clinical experience, gained over a long period of time, by careful observation, is a reliable scientific test. The most perfect theories and the most technical laboratory investigations must prove themselves clinically before they can claim to be scientifically established. Diagnosis by osteopathic lesions, in the experience of many different individual investigators, has established itself clinically."

In establishing the truth expressed in the above quotation from Dr. MacBain's paper presented at the Detroit convention, the osteopathic profession has traveled a long, difficult road. Osteopathy was born at a time when laboratory methods of investigation of biological facts were just coming into fashion. The natural philosophic outgrowth was the belief, on the part of many teachers particularly, that no investigation of any sort was worthwhile except that carried on under the rigid rules of the laboratory. In no field

*Recent articles in this JOURNAL pertaining to this highly important subject: Burns: Palpation and Pathology, May, 1929; McConnell: The Trained Tactual Sense, September, 1931; Schwab: Palpation Diagnosis of Toxemia, September, 1932; MacBain: Diagnosis by Osteopathic Lesions, October, 1932.

has this method of study developed so far as in the early study of physiological chemistry and bacteriology as each of them became important in the study of medicine.

It has taken many years to demonstrate that pure laboratory technic is rarely if ever a sufficient test for any diagnostic or therapeutic procedure. Chemical processes which work one way in the laboratory have been proved time without number to work differently and to produce different results in the living organism.

So that after a definite attempt to make of the practice of medicine, both diagnostic and therapeutic, a pure science, it is apparent to even the most zealous laboratory worker that after all clinical experience, coupled with close observation, is the *sine qua non* for any diagnostic or therapeutic procedure.

The other day in listening to an erudite bacteriologist discuss in pure scientific terms, certain activities in connection with the growth and destruction of bacteria, we were struck by the fact that this brilliant scientist, absolutely familiar with every phase of modern bacteriology and its relation to the practice of medicine, should so frequently make the statement that "this is what has happened in the laboratory but, of course, we cannot be sure how it will work until many doctors have tried it out."

Happily, the same attitude is becoming a little more apparent among all scientific workers. They have finally decided that clinical observation is after all the final acid test of the propriety of any technical procedure.

And now as we swing again to the opposite pole with a new emphasis on such subjects for instance as physical diagnosis, there is a tendency to ignore laboratory findings. The story goes, for example, that in one of Chicago's largest hospitals the basal metabolism apparatus is rarely used. The clinical observer, through years of observation, finds little necessity for its findings.

Without question, of course, somewhere between these two extremes, there is a straight and narrow path. Along this path on either side are the sign posts of careful clinical observation on the one hand and absolutely pure scientific laboratory tests on the other. An untrained man may not read these signs, but to the modern educated physician, "he who runs may read."

R. C. Mc.

THE HOUSE OF DELEGATES

The time is long since past when anyone might accept the honor of office in the American Osteopathic Association without being compelled to meet the obligations as well.

Have you ever considered that one of the greatest evidences of the value of the American Osteopathic Association lies in the amount of time and thought which men and women representatives of the divisional organizations are giving to organizational work of our Association?

Those who act as your representative in the House of Delegates, which is the legislative and elective body of the Association, and who represent the delegated powers of the divisional societies in national affairs, give untiringly to the business matters that come before the Association at each session of the House during the annual convention. It is the American Osteopathic Association during its sessions.

It is a credit to the principles underlying osteopathic practice that the members of the House of Delegates are willing and able to make the sacrifices necessary, the sacrifice of missing the greater portion of the scientific offerings of the convention, in order to serve our beloved organization zealously and devotedly.

Matters of grave import to the future of osteopathy are dealt with in the House of Delegates. Therefore in selecting delegates there is need for great care as much depends upon them. There are too many arguments, too many reasons, too many thoughts to be expressed—for any divisional group or even the pages of our publications, to present them all for an unprejudiced decision.

It is therefore important that your representatives be tried and true. It would be unfortunate, I believe, if each year the House of Delegates were made up of unseasoned members. It would retard considerably the dispatch of business.

When men and women, year after year, fulfill their duties to the Association, as have Gerdine, McNeff, Chiles, Wendell, Swope, Chandler, Medaris, Rogers, Walker, Grow, MacDonald, Bridges, Yowell, Northup and many others,—we are indeed grateful for the spirit that guides them.

We have reason to be proud of our osteopathic structure and plan of organization. However, we are not satisfied that we have anywhere near reached perfection. In fact that state will never be reached as a finality, as we must either meet the test of constantly changing conditions or submit to revisions.

Regardless of the greatness in size or complexity of our Association it is not to be forgotten that the individual members of the American Osteopathic Association are more important than all the machinery of the organization, and that our goal is to serve them faithfully and well. The Association exists for the benefit of its members; not the members for the benefit of the Association.

The next meeting of the House of Delegates will be in Milwaukee, at the time and place where you should be, for your good as well as ours.

Victor W. Purdy.

"NEVER SAY DIE"

In a recent discussion before a group of Chicago osteopathic physicians, a speaker brought out the fact that during the depression many people who formerly employed physicians more or less regularly, are getting along without that attention and apparently doing as well as before. He raised the question: Are we doing as much as we thought, and do people need as much of the attention of doctors as they have been considering necessary? In other words, are we as

important as physicians, and are we as responsible for the maintenance of the health of the community in which we live, as we have thought ourselves to be?

In thinking this matter through another question comes to mind which frequently is raised: Has osteopathy performed its mission to the world, and will it as a school of special therapy pass into history? Although our colleges at the present time are well filled with a high grade student body, and the instruction probably is not surpassed by that given in any of the standard medical colleges of any school, one wonders at times whether strong enough emphasis is placed upon the matters pertaining distinctively to osteopathy and osteopathic therapeutics. Some one says: Yes we are training up osteopathic physicians, and in doing that we are making the effort to develop doctors in every sense of the word, who will be equal to cope with any problem or situation which may come to any doctor conducting a general practice.

Granting that the osteopathic physician should be so equipped, or have access to any equipment of which he may find himself in need, we begin to realize that we are between two forces; one which says that manipulation is the all important thing, and the other demanding a training and later a privilege which covers everything to be known in medical science. This brings us back at once to the oft repeated proposition of educational prerequisites and college courses.

If as physicians we are going to undertake to do *everything*, we must have an unlimited privilege, and for the man or woman who has the proper training and can meet all the requirements of education and years of clinical training, there can be no objection to such an arrangement. For the most of us it seems to the writer that there is a different course, and a much greater responsibility if osteopathy is to continue to live as a system of therapeutics sufficiently distinctive in character for it to remain independent of, and not become absorbed and lost to humanity in the great whirlpool of allopathic domination.

It would seem, then, that the first thing to decide is whether or not it is at all necessary to strive to keep osteopathy as a separate system of healing; and second, whether we are fast approaching the place where the need of calling attention to this new and wonderful discovery for the benefits of suffering mankind is no longer needed, but where the administration of the principle is to be intrusted to the dominant school of therapy for development *"or preservation."*

As we look back into the history of homeopathy and what has happened to it, we can make but one answer to the second proposition. If osteopathy is to live and perform its special mission to suffering humanity, it is absolutely essential that it maintain its independence from the domination of any other school of medicine. If osteopathy should for any reason be taken over as part of the training given in allopathic colleges it would probably receive the same kind of consideration as massage, hydrotherapy, physiotherapy, homeopathy and all the rest as adjunctive therapy. With this sort of treatment, even if skilled osteopathic physicians could be found to give the lectures in osteopathic principles (which I doubt), that would be about as far as the instruction would be carried. It would not be possible to give to the student the slightest conception of what osteopathy is or its great importance in the realm of health and disease.

The writer does not believe it would be possible for the osteopathic principle to advance if taken over and taught as a part of the course of the so-called "regular" medical colleges.

There seems but one other program to follow. Our educational program has been constantly raised to a higher and higher level, the colleges have strengthened the courses given and in the future this high standard of instruction must be maintained.

If osteopathy is to live on to perform its best service to humanity it must do it through the importance given to the fundamental things of our service. They must be taught to our students intelligently by men and women who know, and who can impart the knowledge to the student in such a way that he can go out into practice and utilize that knowledge in its application to diseased conditions with the assurance that it will not fail him in the emergency any more than it does in the case of the chronic patient who is able to come into the office for attention.

The question to be decided is: Are we to strive to develop "all-round doctors" or "osteopathic physicians" equal to cope with any emergency to which a doctor may be called?

GEORGE H. CARPENTER.

HE'S SURE TO BE THERE

"As long as I live, if God lets me be healthy, I'll never miss the national convention." So opened the conversation in the Central office not many days ago between an up and coming osteopathic physician and the writer.

True to his sentiment, the practitioner in question has not missed a convention in many years. He is the type of convention attendant who absolutely devours and assimilates every item of interest which comes within his ken. He is the first man down in the morning and the doors of the general program and the sections are shut upon his flying coat tails.

He wants the national convention sooner or later to come to his city. He combines enthusiasm with an intelligent knowledge of the scientific advances of his profession. He manages to assimilate the high lights of every section program. He knows the advances which osteopathic surgeons are making and the theories upon which they speculate, and withal he knows his strictly manipulative osteopathy and practices it with a skill which is given to few.

"A remarkable individual," you say, "blessed by nature with unusual physical ability and mental agility, a superior type of physician, one worth emulating."

We quote him again—"I'll never miss the national convention."

R. C. Mc.

CLINICAL EVIDENCES OF THE SPECIFIC LESION*

George V. Webster gives the diagnostic evidences of an osteopathic lesion thus: "Tenderness on palpation; restricted motion; altered position; surrounding tissue tension; local edema; lack of normal tissue elasticity; alteration of contour; change of posture; local temperature change; local color change; consciousness on the part of patient of something wrong; lack of functional capacity, either local or remote; the favorable results of corrective effort both as to local physical findings and functional activity."

There is nothing the matter with osteopathy, but there is a whole lot the matter with our application of it. Looking back over twenty years of a moderately successful practice, I can see a number of spectacular cases—that is, the results obtained stand out from the general run as an arc light outshines the tallow candle. Surely this experience is common to all osteopathic physicians. In my own case, a greater knowledge of osteopathy might have multiplied these cases scores of times.

Many of us take far too little time to study the body of a new patient before beginning treatment. There are some who will have a new patient sit on the table for a minute after getting a brief case history, and run their hands down the patient's spine over the clothing, note that the patient flinches when they press on certain regions, and then proceed to treat.

How can a doctor hope to make an intelligent diagnosis of a lesion without taking time to examine carefully the patient's bare back? Some of the biggest men in the profession who have made an extensive study of spinal diagnosis, are big enough to admit that in some cases the condition is so complex that it takes months to ferret out the basic lesion.

J. Wesley Scott.

INSTITUTIONS AND INDIVIDUALS

It seems entirely probable that one deterrent to the entrance of students into osteopathic schools is the obvious growth of the tendency toward state and institutional medicine. Advising practitioners, noticing the tendency in this direction, hesitate to send their own children or other possible prospects to osteopathic colleges when they see this new hurdle set up in the way of individual effort by and for the benefit of the individual practitioner.

If the best of doctors (and every entering student aspires to be the best) may have no more reward for their practice than the doubtful gratitude and the monetary pittance which comes to doctors under state medicine, it is not surprising that the keen young applicant tends to turn his attention into lines which are more productive of recognition of ability and financial return.

R. C. Mc.

*Webster, George V.: Clinical Evidences of the Specific Lesion, Jour. Am. Osteo. Assn., Oct., 1931.

SOMETHING TO THINK ABOUT

If a representative of a particular school of medical practice would have a full and rich understanding of the therapy of that school, an understanding that radiates and attracts the greatest respect and confidence, he must acquire a diagnostic concept of it. That means that he must understand its background or family history, the facts of science that contribute to its being; he must understand the circumstances of its inception, the time it became a distinct entity; he must understand its history and development from inception to now; he must understand its struggles with the forces of destruction; and he must acquire an insight into its future. It is only through such an understanding of his therapy that a physician can develop the power and ability that will enable him to render the greatest measure of service. Students of medical practice must not neglect that important phase of their education.

B. C. Maxwell.

Department of Professional Affairs

JOHN E. ROGERS, Chairman
Oshkosh, Wis.

BUREAU OF HOSPITALS

GEORGE J. CONLEY, Chairman
Lakeside Hospital, 2801 Flora Ave.
Kansas City, Mo.

HOSPITAL SUPPORT—ITS PROFESSIONAL ANGLE

Every bit of hospital business originating in osteopathic sources should be turned to the osteopathic institutions. Every legitimate effort to accomplish this end must be utilized. Disinterested, or at best, indifferent advice or suggestion to prospective patients to patronize such institutions will not suffice. Definite, insistent, enthusiastic support must be the order of the day. The osteopathic profession must realize the importance of this measure and must accept the responsibility in a militant manner. Not only must its members advise enthusiastically, they must insist upon their patients utilizing the facilities of the institutions representative of the osteopathic profession. Yes, it must be made even stronger—the doctor must see to it that his patient is aware of all of the personal advantages accruing to him from osteopathic hospitalization and he must be apprised of its far-reaching influence upon the future of the osteopathic profession as well. The doctor must do this even at the outlay of personal expense and sacrifice. It is his gesture of acceptance of responsibility in the perpetuation of his school of therapy. It is an acknowledgment of his duty to the institutions which recognize his professional degree and which allow him the fullest freedom in the exercise of its privileges. It is his recognition of the ultimate needs of the solidarity of his profession. It is his obeisance to the initiative and the sacrifice of the man or men who conceived, promoted, built and maintained them as havens of refuge for him in time of need.

Schools and hospitals are an absolute necessity for osteopathic permanency as a separate school of therapy. The necessity for the schools needs no argumentation. Without schools osteopathy would die. The source of supply of its practitioners must be safeguarded, nurtured, and perpetuated.

Hospitals are a necessity of almost equal importance to osteopathy to insure flexibility, freedom and permanency in its practice.

The hospital is a necessary adjunct to a school as a teaching factor. It is during his undergraduate days that

the student becomes conversant with the beneficial aspects of the hospital in the treatment of diseased conditions. He recognizes the necessity for accuracy in case history, the type of laboratory assistance most beneficial, and the detailed daily records of the progress under treatment to substantiate the results of such treatment.

He has the chance to observe and study the living pathology underlying such diseased conditions as are driven to the operating table for relief. He is brought into contact with emergency measures in acute conditions which will prove invaluable to him in his general practice. Lastly it tends to make him hospital-minded.

Again, the hospital is a school necessity in order to give intern training to as many of its graduates as possible. The time is coming when internship in a recognized hospital will be a requisite for licensure in practically all states. Our profession must recognize this trend of opinion and must begin now to make preparation for such a state of affairs. Our present hospitals must be developed to their maximum capacity and new institutions inaugurated to the end that all of our graduates can have the advantage of such training. This departure is coming and osteopathy must be prepared to accept and meet such requirements. It can be done if the profession rises to its opportunities.

Our hospitals must be expanded to their fullest possibilities in order to give adequate training to graduate general practitioners of a generous experience who feel the urge for specialization. The volume of work must be sufficient and its diversity must be of a type that will allow such training to be intensive in nature to yield the best results. This expansion of our hospital facilities for graduate training is a prerequisite for future institutional development. New hospitals are needed far in excess of our professional ability to supply. Competent men necessary to man them are wanting. Any time a hospital is contemplated for a community, the first question is the availability of competent specialists to render service comparable, at least, to the average of that in said locality. Next, the plant equipment and service must measure up at least to the average maintained by other hospitals in that vicinity. These fundamental factors are an absolute necessity if the high plane deserved by the osteopathic system of therapy is maintained.

Trained men, competent to meet the exigencies of the routine hospital requirements are limited in number. The need for osteopathic hospitals in our more densely populated communities is urgent. Our existing institutions logically are the means necessary to furnish the requisite training to men desiring to qualify.

The volume of business originating in osteopathic sources is adequate to double or treble the capacity of every osteopathic institution in existence, if that business were centralized in those institutions. In a comparatively short time men would be available for new institutions in other virgin centers of population. All of which is easy of accomplishment if each individual would awaken to his sense of responsibility as an integral unit in the general plan of osteopathic institutional expansion.

The osteopathic hospitals are a necessary part of any legitimate extension of osteopathic prestige. The routine case records, the laboratory tests necessary as adjuncts to substantiate diagnostic findings and the records of results of treatment of the various diseased conditions hospitalized, furnish valuable and invulnerable evidence of the efficacy of osteopathic methods of treatment. These records are the ammunition for the "Big Berthas" when they are trained upon the vulnerable points in the lines of defense of the dominant school of practice. The facts derived from them stabilize and standardize osteopathic methods of treatment. These findings demand respect and recognition from men of scientific training which can be compelled in no other way.

The reaction of all of these accomplishments upon the general professional standing of osteopathy is invaluable, and its reflection upon each individual practitioner is proportionate to his capacity to receive.

Concerted action to get osteopathic business into osteopathic institutions must be the immediate business of every osteopathic physician who has the ability to reason from cause to effect and who has the vision to contemplate the possibilities of osteopathic expansion as a school of therapy and in its reaction upon his own local activities as well.

Osteopathic institutions are the only tangible evidences of osteopathic durability and success as a school of therapy. The layman can visualize an institution. He realizes that it represents something of value. He knows that every structure must rest upon an adequate foundation. He reasons, too, that the larger the structure, the more pretentious its appearance, and the greater evidences of prosperity attending it, the more solid, substantial and enduring is the actuating power behind it. The tendency of everybody is to gauge the importance or position of a person or thing by the front presented. Institutions are no exception to the rule. A hospital of 200 beds presents a more imposing appearance than one of 25 to 50 beds. A thoroughly modern institution in every respect instantly attracts favorable comment, whereas a makeshift proposition improvised from an old residence receives unfavorable reflections. All of which means that our hospitals should be as large as the natural volume of the osteopathic business will allow and in structure they should be as modern as circumstances will permit, to the end that the importance and prestige of osteopathy as a school of therapy be accorded recognition to which its efficacy entitles it.

The thinking public will be impressed in proportion as we succeed in attaining these ends. Bedside results in practice are important, but unfortunately react upon only a very few individuals. Imposing institutions representing osteopathy impress mass attention and reflect the sum total of individual bedside efforts.

Sober thought and action on the part of every osteopathic physician is demanded on this proposition.

G. J. C.

BUREAU OF PROFESSIONAL DEVELOPMENT

ARTHUR E. ALLEN, Chairman
1127 Metropolitan Bank Bldg.
Minneapolis

SPECIAL COURSES OF INSTRUCTION

Efforts of the Bureau this month have been centered on providing new sources of supply through which additional records of childhood injuries might be obtained for Dr. Jennie Alice Ryel. Letters have been sent to all of our colleges and the majority have already agreed to assist in recording these injuries. Letters are now in preparation to be sent to our private clinics throughout the country that they also may assist in obtaining these records, and later requests will be sent to many individuals throughout the profession for their assistance.

This Bureau requests cooperation from all members in the field in obtaining information relative to individuals who are offering special courses of instructions to the profession in any type of treatment. We are building up a card index of information in order that we may be able to give reliable information to the profession whenever it is requested. We are just as anxious to accumulate favorable information about these various instructors as we are unfavorable information. It is not the purpose of this Bureau primarily to recommend any special course of instruction but we do hope by accumulating reliable information, through the help of the profession, to save the profession time and money when something is being attempted which is plainly unscientific in principle.

A.E.A.

State Boards

Florida

Frances Tuttle, Miami, secretary, reports that the State Board of Osteopathic Medical Examiners will meet October 4, 1932, at Jacksonville. Applicants will be examined at that time.

Pennsylvania

Harold J. Dorrance, Pittsburgh, was reported in the Pittsburgh *Press* for July 29, as being appointed by the governor to the State Board of Osteopathic Examiners.

Department of Public Affairs

E. A. WARD, Chairman
Saginaw, Mich.

COMMITTEE ON OSTEOPATHIC EXHIBIT DEMONSTRATION CLINIC

DELLA B. CALDWELL, Chairman
Des Moines, Ia.

SEVENTH ANNUAL ILLINOIS STATE FAIR FREE CLINIC

The seventh annual Free Child Health Clinic, conducted by the Illinois Association of Osteopathic Physicians and Surgeons, at the Illinois State Fair, occupied five busy days, August 22 to 26, in which nearly 400 children were examined.

This clinic has grown in interest to the public, as was evidenced by the numerous requests for registrations after the quota had been reached and the disappointment expressed in many instances upon being told the registrations were closed. The thoroughness of the osteopathic examination has been broadcast by those who have had their children examined until it is generally spoken of as being wonderful and many would not think of missing the benefits of it annually. More than passing praise is due the several attendants, some of whom have been with us each of the seven years the clinic has been conducted, and who are most efficient in their respective duties.

Five weeks before the date of the fair, the clinic was announced in the newspapers of Springfield, and the A.O.A. central office gave it to the press associations and to the papers over the state.

It is the design of the clinic that osteopathic physicians all over the state send in for registration, children in their respective communities; but either that is not thoroughly understood or it has not yet been sufficiently impressed upon the doctors. This year only Drs. Alice Oliphant, Virginia, and L. E. Staff, Jacksonville, sent in names, the former sending twenty-seven.

The professional staff, managed by Dr. C. E. Medaris of Rockford, was composed of about fifty of the most loyal, efficient and live members of the osteopathic profession in Illinois. Several of these have been on the staff each year, and they have truly been the sustaining power in making the clinic measure up to what it was originally designed to be: educational publicity for osteopathy and a public benefit to the children of the state.

It is an educational benefit not only to the parents whose children are examined, but also to the throngs of people who stand constantly before the glassed-in booth the entire time the examinations are going on there.

Several parents who have brought their children annually for examination proudly call to the notice of the doctors the improvement in the health of their children from following the advice given at the clinic. Much interest is shown also in receiving the osteopathic literature that is passed out from the booth. Many mothers ask for it when leaving after their children have been examined.

Several pairs of twins were among the children who came for examination. Some very interesting and unusual cases were discovered of conditions of which the parents were totally ignorant, in some of which operation was the only remedy, but most of which were found to be amenable to manipulative treatment.

Only one case was found to be so mentally defective that no relief could be offered and the mother went away not altogether disappointed, but very much dejected, for she had held osteopathy as a possible last hope for her afflicted child. She had a younger child with her who was almost 100% normal. Out of the hundreds examined, a comparatively few perfectly normal children were found. Many children would be neglected and their defects develop into serious, if not incurable conditions, were it not for taking advantage of such free-of-charge opportunities as the Illinois State Fair Clinic offers.

IOWA STATE FAIR ADULT HEALTH CLINIC

Osteopathic history for 1932 has received a distinct contribution from Iowa. This contribution was the holding of the first free clinic for the complete examination of adults ever conducted at a state fair by the osteopathic profession. It far exceeded our expectations and clearly demonstrated its value to those examined and to the examining physicians. It proved its value as the best form of publicity to demonstrate the full scope and thoroughness of osteopathic practice, well worth-while in view of the legislative situation.

A year ago I stood alone as an advocate of the adult clinic idea. Today Iowa is full of those advocates. A year ago there were only opinions to back up the adult clinic idea. Today we have facts and figures. A year ago it was said "It cannot be done." Today the answer is "It has not only been done, but successfully done." Vision, leadership, hard work and coöperation is a combination mighty hard to beat, and all these Iowa had.

How correct our vision, how efficient our leadership, how hard we worked, how genuine the coöperation, the following figures will testify.

During the seven days this adult clinic was held 364 patients were examined. Of these 135 were men, 25 boys under 21 years of age, 188 women, 16 girls under 21 years of age. Thirty were referred for x-ray examination to the Des Moines General Hospital; 54 x-ray pictures were taken; 14 were referred for surgical work.

The 364 was double the number we expected to handle. The floor plans and staff organization were such that these additional numbers were handled efficiently, smoothly, and satisfactorily to all concerned. We were full to capacity all the time and would have examined twice the number if more room had been available, but it was not.

Registrations had been coming in for some time before the fair opened, and were being scheduled every 15 minutes, 9 to 12 a. m., 2 to 4 p. m. This schedule could not be followed even the first day because of the number desiring examinations. Consequently registrations were made every 15 minutes continuously from 9 a. m. to 5 p. m., the last examination being finished about 7 p. m. Lunch time was arranged in relays to permit examinations to proceed without delay.

Our space, 15x45, was every inch utilized. It was divided into three rooms, each 15 x 15, the middle room being the reception room. The one on the right for men, and the one on the left for women were each divided by movable partitions into a dressing-room, and three examination rooms. Five feet of the rear of the reception room was cut off by a low partition and divided into spaces for laboratory, evaluation table, and a dark room for ear, nose and throat examinations. This low partition gave the impression of a full-size reception room.

The patients were measured and much of the case history taken in the reception room by students who accompanied each person through the different departments (structural, thoracic, nervous, abdominal, pelvic and rectal) watched the examinations and checked the findings of the examining physician on the record sheet. Following these examinations came the ear, nose, and throat booth, after which the complete record was given to the evaluating physician and laboratory findings recorded. After careful consideration of all recorded data, and an interview in the light of that data by the evaluating physician, a final diagnosis was made and advice given. No physician except the one at the evaluation desk made a diagnosis or gave advice. This evaluating physician was either the chief-of-staff or one of his two assistants, who did most of this work, the chief-of-staff being busy in general supervising.

All case records are in the hands of our secretary, Dr. F. A. Gordon, Marshalltown, and are the property of the exhibits committee for tabulations, and comparisons, in future examinations. However, on request of the physician to whom the patient applies for treatment, a copy of the findings, diagnosis and advice will be forwarded to him. Already large numbers of physicians have requested this information.

THE FORUM—full of the news of the profession, its schools, its state organizations, its legal problems—is interesting, even absorbing. It is already bigger than of old. Insure your receiving all subsequent issues. Renew your A.O.A. membership now.

LEGAL AND LEGISLATIVE

A. G. CHAPPELL
Legislative Adviser in State Affairs, Jacksonville, Fla.

HEMORRHOID INJECTIONS—DRUGS, SURGERY OR OSTEOPATHY

Judge Frank D. Shankland recently decided in the Circuit Court for Polk County, Iowa, that the injection of hemorrhoids with Wesson oil and phenol is neither major surgery nor "internal curative medicine", but that it is osteopathy, possibly including minor surgery. This is in keeping with the decision in the district court for Black Hawk County in March, 1932, in which G. B. Groves was upheld in the same practice (JOUR. AM. OSTEO. ASSN., May, 1932, p. 353). That case has since been carried to the Supreme Court.

In a well written decision for the defendant, W. P. McPheeters, who was defended by Attorney Henry E. Sampson, Judge Shankland said, among other things, that under an agreed stipulation of facts, it appeared that the defendant has treated hemorrhoids by the use of 95% Wesson oil and 5% phenol, and that such compound was injected under the mucous membrane above the hemorrhoid.

"The state claims that this manner of treatment comes within the definition of major operative surgery and the administering of internal medicine. The testimony shows that the object of the treatment is to correct the engorged vein and that it requires an injection and that by the use of finger technic employed by osteopaths, the anal lining is restored to a normal position, the injection being for the purpose of causing a local irritation, creating inflammation and adhesion of the mucous membrane of the canal and the outer walls, thereby affording support to the walls of the blood vessels.

"The defendant claims, and the witnesses so testified, that it is a restorative process accomplished partly by finger technic and constituting a natural part of osteopathic practice; that it is a mere mechanical process; that, if surgical at all, it is nothing more than minor surgery; that the treatment cannot be properly denominated or considered as the giving of 'internal curative medicine.'

"All that plaintiff's witnesses testified to in this particular was that such injection was internal medication; none of them said that it constituted the giving or prescribing of 'internal curative medicine.'

"We would have little more than osteopathic manipuation treatment when, by means of finger technic, the baggy lining is pushed up into its normal position, and fastened there by restoring it to its original stiff condition, adhering same to the outer muscular wall.

"The deposit within the lining of a small quantity of Wesson's cooking oil and phenol by means of a hypodermic needle, at most, was but a small amount of minor surgery, and within the privilege of an osteopathic license. It is the opinion, and the holding, of this court, that the hypodermic injection used by the defendant and described by the witnesses, is minor surgery, and that such treatment seems reasonable, having in mind the limited scope of the surgery done, the accessibility of the parts, the absence of known complications, the lack of danger from shock, the improbability of postoperative complications, the short duration required in making the injection, the lack of pain and mental suffering, the absence of resulting mutilation and disablement, the fact that no anesthetic is required, and that the patient is able to return to his home and to work immediately following such ambulatory treatment.

"Instead of proving that defendant was practicing medicine without a license, as charged in the petition, the evidence of plaintiff attempted to show a violation by the defendant of criminal statute, Section 2554 of the Code.

"Where a statute forbids certain things, it is to be construed as excluding from its operation and effect all other things not so prohibited. And where it directs the performance of certain things, in a particular manner, it forbids by implication every other manner of performance.

"There is another rule in the interpretation of statutes that all words should be given effect if possible and none treated as superfluous. There, the words 'internal curative medicine' should have a different meaning than 'internal medicine.'

"The treatment was in line with the theory and purpose of osteopathic practice, involving a slight degree of minor surgery. Wesson oil is not a medicine or a remedy and is not a curative. It would appear from the evidence in this case that there is a certain class of medical men who in order to nullify the law and defeat its purpose, would wipe out all distinction between major and minor operations and would classify every surgical operation, from lancing a boil to removing the gall bladder, as major operations. That is not the fact and that is not the law. Every person of normal intelligence knows that there are minor surgical operations and major operations. It does not require a knowledge of either medicine or surgery to know that fact." [Condensed]

RABIES VACCINATION IN MICHIGAN

Leo H. Bock, Dowagiac, Michigan, only recently received payment from the county for administration of antirabies vaccine to indigent patients in 1928.

The county medical association made strenuous objections after the payment of the bill saying that the administration of the vaccine was contrary to the state law governing the practice of medicine.

CITY HEALTH OFFICER IN MISSOURI

Perry S. Borton, Kahoka, Mo., reports that he has served two full terms and part of his third as city health officer.

Athletics Section

JAMES A. STINSON, Chairman
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THE RELATIONSHIP OF THE PHYSICIAN TO THE ATHLETIC TEAMS OF THE SCHOOLS AND COLLEGES

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The development of physical education in our schools, colleges and universities along more constructive lines of physical development or recreation, has brought forward the importance of physical examination and attention to condition before competition is permitted.

In the eyes of the authorities both directing educational institutions and encouraging interclass, intramural, interfraternity, interschool and international competition, this is far more imperative than new stadiums.

The Carnegie Foundation Committee, that has spent thousands of dollars in an investigation of various institutions as to educational qualifications, lack of interest in study, the use of sports as a medium of advertising, and questions of the relation of matriculation to athletics is now definitely interested in a more carefully supervised study of physical fitness and physical development as part of education.

Health education and recreation has been divided in our schools into a formal and an informal program. Compulsory health work has reached the stage of appreciation and necessity. The boys and girls are being given a better opportunity for personal and physical expression by meeting boys and girls from other institutions, who are trained and prepared to test their ability in friendly competition, and determining the strongest, the cleverest, or best trained group at the end of a specified period.

Modern schools realize more and more the value and importance of the school or team physician. They are increasing the hours and making provisions in their schedules to give boys and girls, men and women an opportunity to be examined, to arrange their physical work, to place them in special corrective groups and to recommend their activities.

It is necessary that we take the greatest care in supervising, controlling, and aiding authorities in arranging their program of physical activity, so that it does not interfere with the health of the growing boy or girl. We must help to formulate a definite program that will tend toward eliminating chances of accidents, malformations, and even death.

The relationship of the physician to the school must be along the same lines as that of the office executive to his employes, if he expects effective work to be done. When he is employed, either in the capacity of health director or physician to the team, he automatically places

himself in a place of responsibilities for the lives of the students.

The physician who handles the athletic team should keep a record of every treatment, a history of every case, and follow up work as he would in his own office. Whether it be setting dislocations or bandaging, he should keep this data for his own satisfaction. In case of further injury, when not with an athletic team, this leaves no comeback from the student once injured. The doctor is cleared of all responsibility as long as his records prove his routine of treatment.

He should also report to the head of the school all injuries, so that the authorities know of the treatment given at the time of injury. This is a further safeguard and personally acquaints them with the case, so that if a serious change occurs, the physician, the coach, and the school officials know of the injury. This is vitally important.

Mental and physical equipment is not sufficient as requirements for such a responsibility. The physician who agrees to take care of athletic teams must carry not only his bag filled with the necessary essentials to care for the injured, but must also be quick and emphatic in his decisions when called upon.

The physician who asks the player whether he is "all right" makes a grave mistake, as many head concussions and bone injuries not evident at first, cause serious effects afterwards, when the victims are permitted to continue playing.

It is here that the school depends entirely upon the physician in charge of its teams to remove from the game players who may become seriously hurt. Injured players forced or permitted to play bring criticism to the sport and to the physician.

Sacrificing the player who has not recovered and who feels that just five or ten minutes won't hurt him, when his condition might mean a serious after effect is criminal.

At the present writing we have in our Osteopathic Hospital one of the greatest quarterbacks who ever called signals for his university. When he played at college he had one of those driving coaches whose principal idea was "to win".

This young man received a severe kick in the right kidney, and was permitted to play. His pain and symptoms of being kicked were evident, and he should have been taken out of the game, but he was needed. He knew and the coach knew that he was in no condition to play the last quarter.

Today he lies at the point of death with one kidney removed and the possibility of the other going. Such a sacrifice would have been unnecessary had the physician been permitted to take complete charge. This brings up a very important point. The physician must sell himself to the college and win its confidence and respect so that his decision to keep a man out of the game, takes precedence when an injury occurs.

In all instances when employed or asked to assist, he should make it definitely understood that the coach shall have nothing to do with the return or sending in of players in any activity when hurt. When this is established, there will be less injuries, less deformities, and less deaths.

The physician must be prepared to consider the boy first if called in an emergency. Whether the boy remaining in the football game means another touchdown or the loss of limb or life he must act for the body first, the score last! This is one of the most difficult decisions that confront the physician who is placed in charge of athletic teams and interfered with by coaches and alumni.

The physician can exert a tremendous influence on his team by advising, counseling, giving occasional health talks, recommending diet, and becoming interested in each player. Above all he must win the respect of the school and community as to his relationship with the school.

It must be ethical and helpful and he cannot at any time afford to emphasize the commercial aspect of private office treatment for future patients. This unconsciously will follow, if the physician is the right kind of trained personality.

At present in Pennsylvania, there are thirty-eight osteopathic physicians taking care of teams. Many of them are identified with colleges and high schools. There is no doubt but that scattered all over the United States, osteopathic physicians are more in demand and closely identified with athletic teams, because of their progressive methods of helping such teams. Care of athletic injuries, physical diagnosis, hygiene and sanitation, and health talks bring to the school authorities the reflection of the course of study being given in our osteopathic institutions.

The friendly and sympathetic relationship of the physician to the school or college is so vital that the Philadelphia College of Osteopathy now conducts a course in Athletic Injuries. Every effort is exerted to emphasize the ethical importance, educational requirement, and osteopathic principles so that the physician in charge of teams has a definite understanding of his relationship as a physician to the school, the coach and the player.

In accomplishing this he will secure perfect harmony and create for himself and his profession the respect and appreciation of the institution he is serving. The school that places its trust in him should feel satisfied that the physician in charge of its teams understands his job and will carry on his work for the benefit of the human being and not "the score."

Technic Section

SPECIFIC TECHNIC THAT IS EASY ON THE OPERATOR*

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The technic of treatment is, in a sense, a personal factor, for it is a well known fact that no two osteopathic physicians treat exactly alike. Nevertheless, the principles of technic are constant and universally applicable, and he who applies them with specificity manifestly secures the best results, and exhibits a technic that is finished and characteristically osteopathic. Every case is a law unto itself, and the doctor must study it individually in order to be able to understand it and treat it intelligently.

A carefully educated sense of touch is the keynote of both osteopathic diagnosis and operative technic. To know the difference between normal and abnormal structural deviations and distortions, as well as organic changes, requires an accurate, detailed knowledge of anatomy and pathology with a systematic daily education of the sense of touch; but to realize, appreciate, and know by the feel of tissue resistance that nutritional conditions are improving requires much more than practical experience.

There are obviously so many factors involved that we must limit this paper to a discussion of certain phases of the problem of specific technic from the standpoint of the operator; therefore we will briefly analyze certain manipulative procedures and attempt to formulate certain principles by which you can make the manipulations you now use easier upon yourself and apply them more specifically and with less distress to the patient, or, possibly, improve your use of other manipulations that have not previously been efficient in your hands.

Soft tissue pathology often needs to be just as specifically and directly treated as what may be called hard tissue pathology; but we can consider it here only insofar as it may be indirectly involved.

Let us divide the process for purposes of discussion into two parts: First, preparation and procedure on the part of the operator leading to direct application of the manipulation; second, concerning certain elements of the manipulation itself.

POSTURE OF OPERATOR AND CERTAIN INFLUENCING FACTORS

Considering the operator, posture is of primary importance. The base of support from which our equilibrium is maintained in the upright position is the area bounded laterally by the outer margin of the feet, anteriorly by a line connecting the toes, and posteriorly by a line connecting the heels. In treating, this base of support should be broadened sufficiently to permit free, easy, controlled motion of the body at work. The center of mass of the body is approximately around the second lumbar vertebra; therefore our best position is that which

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maintains the center of gravity or mass of body well towards the center of the base of support.

The height of the table should be adapted to our individual needs. A fairly approximate idea of proper height of table can be secured by standing upright at the side of the table, with the hands at the sides. The table should be adjusted so that the top comes at the finger tips. This may have to be varied slightly to suit individual needs, as treating with the table too high will put too much strain upon the thoracic region, and treating with the table too low will direct it toward the lumbar region. Have table top of such material that the patient does not slide too easily, resulting in less exertion on your part, as you are making better use of patient's weight.

Proper height of the table will put the body of the operator in such position that gross flexor and extensor muscles can function at their greatest efficiency, and the body weight of the operator can be used to greatest advantage.

Save yourself by never lifting the patient unless necessary. But when it is necessary, you can do it very easily by making your body weight help you. If a patient is lying on the table or bed and it is necessary to move his shoulders for a better position in which to treat, place your hands on opposite sides of patient, reinforce elbow of your nearest hand against your pelvis or thigh, then with arm and shoulder girdle set, bend knees and use weight of your body and heavy thigh and back muscles. If necessary to move pelvis of patient, place one or both hands on patient's sacrum near table, with patient's knees against your thighs, and lift with body weight.

If you are in a position when lifting in which the back is bowed and lumbar curve is posterior instead of anterior, then your back is in position for strain and injury. Instead, keep your back straight, and, if possible, with your lumbar region in as near normal curved position as you can bring it.

CERTAIN PRELIMINARY FACTORS OF MANIPULATION

Concerning the manipulation—adapt it first to yourself, and then to the needs of the patient or the specific problem or type of pathology you are treating. You cannot always adapt the patient to a set form of treatment that you have been in the habit of giving, in the hope that some part of it will "hit the spot," for type and location of pathology vary from treatment to treatment. In a paper read before the Technic Section, Dr. Russell R. Peckham has shown that examination of the lesion region sufficient to indicate types and location of pathology will predicate the choice of manipulation.

In using your hand, grasp the skin or muscles with pads of fingers, hand nearly flat. When edge of forefinger is used in making a thrust, as in certain cervical technic, reinforce with other fingers, thus adding strength and stability to your thrust.

Leave no "corners" on the manipulation. Make each element of the manipulation blend with the succeeding one, so that the result is a smooth, progressive, coördinated movement. Work in the circumference of body or segment, not a tangent, thus avoiding gouging and making it possible to blend component parts of manipulation more easily. It is easier to change the direction of movement when the general course of each movement involves an arc of a circle.

Muscle tissue functions most efficiently in its middle range of motion. Therefore, in using the arms for certain types of manipulation, keep the arm in the middle range of motion, thus avoiding undue tension in either extreme flexion or extension.

IMPORTANT ELEMENTS OF FINAL MOVEMENT OR THRUST

As to thrust, most of the time it is of advantage to use the arm and shoulder girdle somewhat "set" in its position, the wrist flexible, with back straight, and the weight of the body behind the thrust, instead of a strictly muscular movement involving principally the shoulder girdle. By applying this idea, we can readily see that we first bring into play the muscle tension of the upper extremity, then the heavier trunk muscles, and finally the body weight, thus building up an increasing potential force, at the same time permitting more nicety of control. It is often helpful to reinforce the arm by resting the elbow on the pelvis, thigh, or knee, thus bringing more readily into play the heavier muscles of the body and the body weight, giving added firmness and stability to the thrust. By using the above factors in the thrust, we can easily vary the amount of force used, and minimize our own efforts.

Bring the segment into position for correction. Feel the tension and test the joint slightly with a preliminary attempt at correction. You may have to hold this position until you feel that the patient has relaxed, and also that all "slack" is removed from your muscles. Generally, it is best not to go "through the patient's guard", nor attempt correction unless you can get the segment into exact position for correction. At this point you should feel that tension is directed against the limiting pathology, and that a little further movement will result in correction or in freeing the joint in the line of correction. Some have called this sense that is developed with experience and training of the sense of touch, as well as ability to interpret what you are feeling with your fingers, the "lesion sense."

Force used varies as to quantity, direction and speed, as tissue resistance indicates. Force of thrust should be just sufficient to accomplish its purpose, plus a "follow through" similar to that applied in striking a tennis or golf ball. Direction of thrust should be not only such that it comes directly through the limiting pathology, but also it should be of an elliptical nature. This permits of more readily changing the direction to accommodate to what you feel should be done at varying stages of the application of the thrust, depending upon tissue response under your fingers.

Relax tension somewhat slowly, after thrust is completed, so that the patient does not respond with violent contraction of muscles of segment, possibly undoing some of the work accomplished, or adding further irritation.

Avoid treating while you are in a tensed position. This reduces your own flexibility of control, and in addition, is sensed by the patient, resulting in a similar response from him. This suggests another idea.

If stimulation is desired, work at a staccato tempo; but if relaxation is desired, work at a slower rhythm. You may even find it helpful mentally to hum a tune and quiet yourself down to the tempo to which you desire your patient to respond. We all know that this slowing process is necessary, for some of us even find ourselves thinking of a prospective game of golf and how to improve our stroke, or maybe of the preceding patient, and automatically speed up our treatment, instead of concentrating upon the needs of that particular patient, thus avoiding useless movements and waste of energy. This is not unusual, for treating specifically means constant mental effort and concentration.

Recent discussions by Drs. Paul Van B. Allen, James A. Stinson and others, have brought out various phases of neuromuscular coördination on the part of the operator in blending the various factors that make for specific technic that is easy on both the operator and the patient. The need for further study of this phase of technic is apparent when we consider what ten to fifteen years of practice has done to most osteopathic doctors.

SUMMARY AND GENERAL APPLICATION

Briefly summarizing, then, specific technic that is easy on the operator involves many factors, among the more important of which we have considered:

First, posture of operator, showing how an adequate base of support permits of more efficient muscular control and the expenditure of less energy, particularly when supplemented by weight of operator. Also that proper height of table, and proper method of lifting patient, when that is necessary, mean lessened effort on part of operator.

Second, that hand, arm, shoulder girdle, heavier skeletal muscles, and body weight, when brought into progressive, synchronous movement leading up to thrust means that but very little further effort is necessary to accomplish correction; the sum total of energy expended by operator being lessened in direct proportion to his coördination of each component part of the movement into a perfect whole.

Third, that force of thrust may be varied as to quantity, direction and speed, as tissue resistance indicates, by bringing into play as needed muscle tension of the upper extremity, then heavier trunk muscles, finally body weight, thus building up increasing potential force, at the same time permitting more nicety of control with less effort on the part of the operator.

CONCLUSION

In conclusion, the problem of specific technic that is easy on the operator mainly resolves itself into a question, not so much of the manipulation itself, as important as we know that to be, as upon greater perfection in the component movements of the operator while treating, such as posture, more perfect neuromuscular coördination involving particularly the factors of muscular tension and body weight supplementing and augmenting muscular strength, and a more exact application and coördination between the tension of the tissues of the segment directed at the limiting pathology and the final effort on the part of the operator more efficiently to accomplish complete or partial correction. The ultimate result is lessened effort on part of operator with greater specificity and ease of treatment.

Discussion

FRED B. SHAIN, Chicago: Dr. Downing has brought out in his conclusion that the manipulation is not so important in itself, as the way in which the operator adapts that method of correction to his particular personality.

He has referred to Dr. Paul Allen in relation to neuromuscular control in the application of technic. Dr. Allen has determined on a method of taking his technic apart and making it fit certain standards applicable to himself.

Briefly Dr. Downing states in summary:

1. Skill depends on an adequate organism from a mental, a muscular and a nervous standpoint. The mental factor involves an understanding of physiology and pathology and of the technic competent to influence the pathology. The muscular and nervous factors alone cannot perfect coördination.

2. The manipulation must consist of a force acting against a resistance in a certain direction and at a given speed. As the resistance constantly varies all of the factors in correction must be capable of infinite gradation.

3. All of those gradations, speed, direction of force and distance can be made smoothly by the use of dynamic relaxation which depends on the proper and automatic use of leverage, anchorage, muscular activity, curviform motion, rhythm and the "follow-through."

4. These various component elements must be analyzed, isolated and rehearsed introspectively and, when perfected, relegated to the subconscious again.

5. The effective use of these principles makes for relaxation in both the patient and the operator, economy of energy and more gratifying and effective technic.

We try to teach our students that there are three things to be taken into consideration in selecting and adopting any special technic for our personal use: (a) This technic must be able to relieve the patient in the shortest possible time; (b) it must do it with little pain or hurt to the patient; (c) it must accomplish correction without undue expenditure of effort on the part of the operator.

This last point is one that every osteopathic physician should take unto himself and study thoroughly, applying it to all of the technic that he uses. Not that we mean that the osteopathic physician should be lazy or treat in a dilatory manner, but to take into consideration that the application of the science of osteopathy is manual labor and the more each individual saves himself, the longer he will be spared to save someone else pain.

It is within the memory of every one here of some well known osteopathic physician who has been forced to give up practice because of ill health or has literally worked himself to death.

If we would apply to the Central office for the statistics on the mortality of osteopathic physicians, I venture to say that it would be very high.

So with all these things to take into consideration, let every one of us take Dr. Downing's paper to heart, take his technic apart, every piece of it, and see where he can simplify it to make it easier of application. It is only by doing this that we can conserve our own natural resources and be able to build longer for ourselves and for osteopathy.

TWO-MAN TECHNIC*

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I have nothing original to offer along the lines of two-man technic, and I know that there are other and better technicians who have developed the theory and practice of this method to a fine point of efficiency. However, I am glad to add my testimony to those who have originated, used and advocated this method of correction of lower back difficulties. It is effective in certain types of backs and in certain conditions which offer much difficulty to me, if I am treating alone, and which I know cause trouble to many good manipulators.

Perhaps the most common use of the method is for the old chronic lesion in the lower back, involving the fifth lumbar and both sacroiliac joints, a pelvic twist, the type of condition that arises from some fall or injury years before. The pathology is that of an old inflammation around strained joints—fibrosis in the muscles, thickening of ligaments and a general stiffening and strengthening with scar tissue of the joint supports which are weakened by the malposition of the bones. This heavy fibrosis and relative immobility make it difficult accurately to localize the corrective forces on the proper focus and too often, when treated by one man alone, the neighboring joints bear the brunt of the attack, thus weakening them rather than correcting the real difficulty. I have found that it is extremely difficult, if not impossible, to get quick and lasting results working alone with many of these cases. They keep coming back. We tell them the lesion has returned but in some cases I am of the opinion that it never was properly corrected. It is upon this type of case that I use two-man technic most commonly and secure excellent results. The preparations, preliminary to correction, consist of a thorough working of the supporting structures of the joints involved in order to make them pliable and better able to adapt themselves to the changed relationship of the bones. This may take weeks.

The second type of case that is peculiarly adapted to this treatment and which is hard for one man to treat alone, is the unusually limber person who has developed a lower back lesion. This is the kind of person that one has to tie into a knot, figuratively, in order to get tension enough on a lesion to move it. This applies particularly to women with slender waists and large hips in whom it is very hard to localize the corrective force in lower back lesions. Using four hands, the corrective force can be localized more accurately than one man could possibly do it.

The third type is the individual who is too muscular or too big for the manipulator to control easily and who therefore gets a "slam bang" treatment often with very little actual correction. We have all treated that type of patient who makes us feel that our efforts are futile. Two-man technic solves that problem in many cases, because it is more powerful.

The foregoing brief description of the types of cases in which two-man technic finds its best use indicates its advantages. It gets results in cases which are difficult or impossible for a single operator to correct successfully. Therefore I feel that it should have a place in the armamentarium of most osteopathic physicians.

However, as have all things, two-man technic has its limitations. These lie both in the patient and in the operator. Assuming that the operator knows the "feel" of tissue and knows how to apply the technic, his main limitation is in his strength and his ability to protect his own back. The second factor is the ability to develop coördination with the second operator so that the effort will produce optimum results. The limitations within the patient are little different than those relating to any other forceful manipulation. It is well here, as always, to check up on toxicity, reflex, contractures, traumatic arthritis, fractures or sprains, age, pain, mental hazard and various other factors which the osteopathic physician considers before correcting a lesion.

I will give a brief description of technic and theory before giving you a demonstration of the actual manipulation. It will be necessary to describe the correction, first, of a lumbar lesion, then of a sacroiliac lesion and finally, as done most often in actual practice, of a com-

*Read before Thirty-Fifth A.O.A. Session, Seattle, 1931.

bination of the two. Let us take the correction of a definite lumbar lesion, as an example. Assuming a rotation of the third lumbar on the fourth, in which the spinous process of the third is to the left, the transverse process is posterior on the right, and there is sidebending to the right, we have an extension rotation sidebending lesion of the third on the fourth. Correction of this particular condition is made with the patient in a modified Sim's position, lying on his left side with his knees together. The spinous process of the third lumbar vertebra is closer to the table than that of the fourth because of the rotation of the lesion. The number two man, who controls the upper part of the back down to the lesion, is in front of the patient. He hooks the fingers of his left hand under the spinous process of the third lumbar vertebra and presses with the heel of his hand against its posterior transverse process. With his right hand he grasps the right wrist of the patient and drops his shoulder lightly on the patient's right shoulder in which position he has the joints of the patient's back locked above the lesion and is in position to exert counterforce on the lesion with his left hand. Operator number one, who is behind the patient, places the thumb of his left hand on the spinous process of the fourth vertebra and picks up the knees with the right hand. He lifts the knees to a point where they can be easily controlled. The patient's back is alternately flexed and extended slightly until the proper tension is found. At this point both number one and two gradually increase the rotation on the lesion until it is tense. Then at a nod from number one, force is applied at the point of lesion; number one pressing sharply down on the spinous process of the fourth and number two pulling the spinous process of the third up and toward himself. There is little force exerted by either of the operators with the hands which are not in relation to the lesion. They merely maintain tension. This is important and if this rule is violated the force is not localized and the patient may be hurt. The up and down force corrects the rotation, while the upward pull of number two and the position of the patient tend to correct the sidebending. Extension or hyperflexion is taken care of by the proper position secured before the thrust is made. This technic will mobilize most uncomplicated lumbar lesions in an efficient manner. If properly done, the spine above and below the lesion to be corrected, is locked and held while the actual force is exerted only upon the joints to be moved. The technic is specific and can be made light or strong at the will of the operators.

Now we will consider the sacro-iliac joints. I realize that this is a subject debated by anatomists, physiologists and technicians. May I present my views without prejudicing you against my thesis because of a difference of opinion on sacro-iliac anatomy or physiology? The articular surface of the sacro-iliac joint is roughly L-shaped. It has two arms. Obviously, when motion occurs, it must be around some given point in the joint which acts as a center of rotation. Thus if any joint on one arm acts as a center of rotation, the other parts of the joint will be free to move around that point. If a lesion is produced it will, unless there is terrific force, be in the direction of a slip backward of the ilium on the sacrum because of the slant of the joint and the pull of the ligaments. Thus the lower part of the joint may be swung back with the center of rotation in the upper arm and we find the oblique fibers of the posterior sacro-iliac ligaments on tension and sore and the ilium posterior in relation to the sacrum at that point. If the center of rotation is in the lower arm of the articulation the upper fibers are tense and sore and the ilium is posterior in relation to the sacrum at this point. Both lesions may appear in the same joint, each arm acting in succession as the center of rotation and there may be an upslip, either alone or complicating one or the other. I have never seen a downslip, at least to recognize it. Let us first consider the correction of the backward slips which produce the familiar anterior or posterior innominates as judged by the direction of the rotation of the crest of the ilium. In the posterior innominate, otherwise known as the up anterior, the center of rotation is in the lower arm of the articulation and we will therefore place the patient in a position which will enable us to slide the ilium along the line of the upper arm. We place the patient in a position similar to that previously described and with the lesion side down and number two holding the sacrum. Number one lifts the knees and flexes the thighs gradually until his thumb feels the proper tension at the posterior superior spine. They both gradually increase the rotation until the ligaments are tense, when number one carries the hand, with the thumb against the posterior superior spine, sharply forward in the direction of the length of the thigh at the instant number two throws additional weight on the sacrum at a given signal. The force is all localized in the direction of correction. Each operator does little more than maintain tension, with the hand not in relation to the lesion. This is important. In order to correct an anterior innominate, otherwise called an up posterior, it is necesary to place the patient so that the force can be directed along the line of the inferior arm of the L, since the center of rotation is in the upper arm. This is achieved by placing the thumb against the posterior inferior spine and with the knees well drawn up against the chest directing the force up in a line toward the head of the patient. Application by number two is as just described, his function being to hold the sacrum. Upslips are corrected by a pull of the leg. Number one determines the angle at which the pull is to be made by feeling the tension of the posterior sacro-iliac ligaments as the leg is moved forward and back and he then holds the pelvis, with the patient in a convenient position, while number two gives the leg a sharp jerk. The leg pull also may be used in other types of sacro-iliac lesions, and is especially valuable following correction of the rotation of the so-called posterior innominate.

A combination of the lumbar correction and sacro-iliac correction is ordinarily practiced because it saves time and effort and gets good results. Number one corrects the backslip or rotation of the sacro-iliac joint as just described, but number two so places his hand in the lumbar area, either by hooking his fingers under a spinous process or more commonly, by holding a transverse process which is posterior, that the force of the thrust by number one, counterbalanced by the force exerted by number two, mobilizes the lumbar area. Thus, in not too complicated conditions, there are seldom more than two thrusts made, one on each side, in mobilizing both sacro-iliac and lower lumbar lesions in a patient.

The technic is not intended for a thoracic treatment and is not ordinarily used above the lumbodorsal junction although skillful operators may so use it. But it is a life saver for certain lower back and sacral lesions and seldom a day passes when it cannot be used by any osteopathic physician to great advantage.

One disadvantage, I realize, is the need of a second person. You are not all associated with effective manipulators as I am fortunate to be. The ideal arrangement is to have a team of doctors each of whom has an intelligent comprehension of the work to be done and of the means to be employed to do it. If there are two of our people in any locality, this method should be studied and developed to a workable basis. However, if a physician understands the work thoroughly, and he can secure any individual—wife, sweetheart or office boy—who will do exactly as told, he can develop an effective team which will function well enough.

Another factor which sometimes causes trouble is the back of operator number one. He must be strong enough to do his work easily and he must learn to save his back by keeping perfect poise and never exerting force when he is out of position. He must, when perfectly poised, deliver his thrust without strain. If he does not do this he may hurt his back and possibly strain the patient by poorly directed force.

Number one must also be careful with his thumbs. Unless they are properly reënforced he will sprain them and because of the force necessary in this work it will render him ineffective. A sprained thumb takes a long time to heal, especially if it is used as we use thumbs. However, with ordinary precaution this accident rarely occurs.

The technic is seldom painful or distressing to the patient and is no more dangerous than ordinary manipulation. So, in spite of difficulties in mastering it, the results achieved by those who know how and when to apply it, are exceptional enough to be an inspiration to those of us who are using it every day in practice. Results tell the story and results from two-man technic are gratifying to both doctor and patient.

Now a word on the economic side of this work. One can charge an extra fee for this special work, calling it

an operation or one can make no additional charge and depend upon the added effectiveness of his work to bring in more cases. In either case it is profitable and a practice builder. Whichever course you follow depends on your preference and the community in which you live, as well as the type of patient. Personally, I favor the extra fee because of the extra work and skill required.

American Osteopathic Society of Proctology

FRANK STANTON, President
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ANAL FISSURES*

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Fissures of the anus may be acute or chronic. An acute fissure is a longitudinal rent in the mucocutaneous lining of the anal canal, characterized by pain during and immediately after defecation. Trauma is the usual cause of the acute or simple fissure. Among the traumata causing anal fissure may be mentioned cuts from harsh toilet paper and injuries from the clumsy use of syringe nozzles, from unskilled prostatic massage, and from passage of hard scybala.

As fissures constitute about ten per cent of all rectal diseases, early recognition and proper management are of great importance. Fissures are common in both men and women, and children are not entirely exempt, especially where mothers or attendants administer an excessive number of enemas, particularly when proper care is not exercised, and when improper diet leads to constipation in the child. Aged individuals are not so apt to be afflicted with fissures on account of the greater relaxation of the anal sphincters.

The lesions may be located at any point on the anal ring. In men the most usual location is in the posterior commissure, but in women the location is about equally divided between anterior and posterior commissures. The acute fissure is more painful than the chronic form and in its early stage is usually superficial, although it may extend deeper later. Unless prompt treatment is instituted the acute fissure may become infected. The source of infection is always present in the anal canal and will enter an acute fissure and produce a fibrous induration of its margins. The fissure is then undermined with the formation of a chronic fissure, or so-called ulcer. The ulcer does not always form. Sometimes the infection extends more deeply forming an abscess which may not be recognized over a period of years and may finally result in a fistula.

An acute fissure may heal spontaneously by the formation of a skin tab, or "sentinel pile of Brodie," which is often mistaken for a hemorrhoid. Such a skin tab is due to the fibrous induration, nature's process of healing such painful conditions. The thickest portion of the "sentinel pile" is usually at the distal end of the fissure. When the tab is removed the acute fissure may again be seen.

On account of the highly sensitive nerve terminals involved, acute fissures induce spasm of the sphincter muscle and the individual develops a fear of defecation, because of the intense pain. This, in turn, induces constipation with its constitutional disturbances.

The cardinal symptoms of acute fissure in ano are: (1) intense pain; (2) blood-streaked stools; (3) a few drops of bright red blood following defecation; (4) reflex symptoms. These reflex symptoms are often misleading on account of the interrelation of the nerves supplying the anal canal and the urogenital organs. Among these reflex symptoms may be mentioned dysuria, dysmenorrhea, vesical retention, and pains referred to the iliolumbar and sciatic regions suggestive of lumbago and sciatica. Although the history generally establishes the diagnosis, a thorough examination is essential. Digital examinations should always be made before a diagnosis is assumed.

When a skin tab is present it may be assumed that there is an underlying pathological condition, and that when the tab is removed there will be revealed an old fissure, an anorectal abscess, a chronic ulcer, or a fistula. Removal of skin tabs, therefore, is essential to proper examination. Successful proctology is based largely upon skill and gentleness in examination. A patient measures the skill of the proctologist by the manner of his examination, and the first examination is of utmost importance in gaining the confidence of the patient. The method of examination naturally varies with the individual proctologist. The writer finds the Sims' position the most convenient for examination as well as for most treatments since in this position the buttocks are retracted or easier to retract.

In this position a fissure, or at least its lower margin, may be seen between the radiating anal folds, unless it is obscured by hemorrhoid or edema of the mucosa.

If local pains or sphincter spasm prevent the usual digital examination, local anesthesia either by topical application or by injection may be employed. Novocaine, nupercaine or benzocaine may be employed. Following digital examination the rectoscope will give a clear view of the field. The Brinkerhoff instrument, or one of its modifications, may be inserted into the anal canal best with a rotary movement, with the blade facing the part to be inspected, and adjusted to the point to be viewed after withdrawing the blade or slide. By the aid of a good light a thorough examination is made.

In deciding upon the course of treatment of an acute or simple fissure, the type of patient under treatment should be considered, whether or not employed, the nature of employment, intelligence, coöperation, nervous stability, age, sex, etc.; all are factors in selecting the method of treatment.

The best procedure for office use is to anesthetize the parts and to pass a small needle-pointed cautery or endotherm knife through the entire bed of the fissure. Usually surface anesthesia is sufficient to allow adequate divulsion in those fissures that may be cured by this procedure. Some operators prefer incision in the treatment of all fissures whether acute or chronic, but the writer has had entire success by reserving incision for treatment of chronic fissures and employing simple divulsion for acute fissures.

Incision is best accomplished under infiltration anesthesia, either 0.2% nupercaine, or 2% novocaine. It is well to administer one or two allonal tablets fifteen to thirty minutes prior to the local anesthesia. This sedative-analgesic quiets the patient, enhances the value of the anesthetic and provides an antidotal safeguard against toxic symptoms due to idiosyncracies to small amounts of cocaine derivatives. When anesthesia is established the buttocks are retracted and a V-shaped incision is made, removing the bed of the fissure, and extending out through the skin about four centimeters. The marginal edges of the mucosa are excised and the incision is packed with iodo-miller for four to eight hours. The packing is then removed and the wound is dressed with K-Y jelly. After the second day an oil enema is administered and the wound is cleansed by hot water or by the means of a hot sitz bath. Postoperative treatment is administered every two or three days until healing occurs. This is usually accomplished in from one to two weeks.

In some sensitive patients general anesthesia is necessary. The writer prefers ethyl chloride, since the anesthesia need not be prolonged, as the operative procedure may easily be completed in a maximum of ten minutes.

As a rule allonal will be sufficient to control postoperative pain, but if an opiate is necessary pantopon is preferable.

Every fissure should be dealt with promptly and thoroughly, not only for immediate relief of the acute symptoms but also in order to avoid spreading of infection through the entire perineum. Frequently perirectal abscesses and fistulas are produced by extension of infection from chronic fissure. Underlying constitutional diseases must be given active treatment. Many cases in the writer's experience give histories of tuberculosis, syphilis, proctitis, polypus and hemorroids. The operator should be certain of the patient's general cardiac, respiratory and renal functions before operating, especially with general anesthesia.

The following important points should be kept in mind in the treatment of fissures:

1. Careful check of the patient's general condition.
2. Thorough examination before diagnosis.

*Given before the Proctology Section, National A.O.A. Convention, Detroit, 1932.

3. Gentleness during examination and treatment.
4. Proper rest.
5. Proper drainage.
6. Regulation of the diet so that without the use of laxatives the stool may be kept so as to avoid fear of defecation by the patient.

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American Osteopathic Society of Ophthalmology and Otolaryngology

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WHAT THE GENERAL PRACTITIONER SHOULD KNOW ABOUT THE EYE*

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Modern education in ophthalmology requires a thorough understanding by the general practitioner of the fundamentals of the anatomy and physiology of the eye, the relation of optics to the correction of errors of refraction and "eye strain," and the more common nose, ear, cerebral and systemic diseases with which are associated diseases of the eye, and a tentative diagnosis (or suspicion) of those eye diseases.

The study of the texts on the structure and function of the eye and on refraction will guide the reader into a better understanding of how these local diseases are evolved, and a clearer conception of the importance of proper and timely treatment. The general physician will be impressed with the facts that there is a fuller wisdom only through counsel and that the best counsel is with those not only qualified, but also sympathetic with advice and assistance. In this connection I cannot stress too heavily the selection of a member of our own osteopathic profession if it is within one's power to do so. I will, therefore, present the following diseases of the eye and their relation to associated disease as primary causes.

Orbital Inflammation and Phlegmon Caused by Sinuitis.—Perforating veins exist between the ethmoidal sinuses and the orbital contents; and between the antrum and the lacrimal duct. Notwithstanding the continuity of the nasal mucosa with the conjunctiva, also the thinness of the bony walls separating the sinuses and orbit, the larger percentage of orbital diseases traceable to sinuses is via a thrombotic perforating vein.

When the *maxillary antrum* is responsible for orbital disease the symptoms are very intense due to a periostitis and frequently necrosis of the bone. Edema of the lower lids, injection and chemosis of the lower half of the bulbar conjunctiva are the chief symptoms at the onset. If phlegmon is threatened the eyeball is displaced upward and diplopia may be present. Osteomyelitis may develop and the entire inner one-half of the orbital floor may slough. An incision through the lower lid, extending its entire length may be required. The pocket should be irrigated daily with a saturated solution of epsom salts.

Frontal sinus infection evidences its extension into the orbit by a fluctuating, tender, doughy swelling at the upper inner angle of the orbit, edema of the upper lid and displacement of the eyeball downward. Frequently a fistula into the sinus is present which confirms the diagnosis. However, a luetic or tubercular osteomyelitis must be taken into consideration.

Ethmoidal infection is perhaps the most common sinuitis in metastatic relation to the orbit. When the anterior ethmoidal vein is the channel of entry the medial halves of both lids are edematous, the caruncle and medial conjunctiva are injected and the eyeball is displaced laterally. If the posterior ethmoidal vein is the source of infection the eyeball is pushed forward (exophthalmos) as well as laterally. Confusion with a purulent dacryocystitis may result. However, the swelling and redness in that disease is usually below the level of the caruncle, and gentle pressure on the sac will evince pus.

Sphenoidal infection is rarely a cause of orbital empyema, and its proximity to the posterior ethmoid cell renders it almost impossible of differential diagnosis from an infection from the latter. Both sinuses should be drained in order to remove all doubt as to which sinus is the offending one.

Retrobulbar Neuritis and the Sinuses.—Perhaps the posterior ethmoid and the sphenoid due to the anatomical relation of the sphenoethmoidal spaces and the optic nerve are the sinuses to which should be charged the etiological relation of the nose to optic nerve involvement. Nevertheless polypoid degeneration, or edematoses, has been proven to be a direct cause. One patient recently, 41, male, broker, with history of chronic right postnasal infection, presented a partial hemianopsia of upper half of right eye (lower field) which cleared after five days of intensive intervention to the sphenoid. The careful general physician will remember in his diagnosis that multiple sclerosis, latent syphilis, tumors and so forth, must be considered even with edema, eyeball displacement, enlargement of the blind spot, positive proof of sphenoid or posterior ethmoid disease.

Iritis, Cyclitis, Choroiditis, Hyalitis, Vitreous Hemorrhage, Cataract, Retinitis, Choked Disk and Sinuitis.—All of these eye diseases have been found present in chronic sinus infection and have been cured by the proper treatment to these diseased paranasal spaces. If the cataract is in the early part of the second stage it will disappear in practically all instances and a marked improvement in vision will take place immediately following effective drainage. Again the importance of other toxic agents as drugs, tobacco, bootleg liquor, and systemic diseases, diabetes, food allergens, syphilis, pellagra, tumors of the brain should be considered.

Asthenopia, Loss of Accommodation, Functional Contraction of the Fields, Blepharospasm.—Headache, ocular fatigue, dizziness, paroxysmal squint and narrowing of the visual field, may be caused by the absorption of poison from a "silent sinus." Whether the poison directly influences the functions of these parts of the visual machine or are absorbed into the general blood stream and through the exhaustion of the general systems, perhaps is of minor importance. The problem for the internist is a solution of the primary factors at fault and through counsel ascertain the proper treatment indicated.

The Eye in Certain Nervous Diseases.—The general practitioner is cognizant of the relation between intracranial pressure and the many lesions causing the pressure, and ocular manifestations. There is a marked similarity in the eye symptoms whether the condition is one of brain tumor, brain abscess, hydrocephalus, tuberculosis, meningitis, or embolus and the subsequent brain softening. In fact, a meningeal abscess of otitic or sinal origin or one that is the result of certain anemias, lead poisoning, fevers or diabetes requires consideration of constitutional and contiguous local disease in addition to the study of the cerebral nervous system before proof may be said to exist as to the true cause. In order that one may visualize the eye symptoms as a clinical expression of the direct cause a brief review of some of the most important nervous diseases and their ocular phenomena will be of practical value.

Tumor of the Brain and the Eye.—The questions, "Where is the tumor?" and "What is the nature of the tumor?" are not necessarily a part of this discussion. Suffice it to say that if there is a tumor within the cerebral enclosure, intracranial pressure is increased and ocular symptoms will be present. The first thought of the general physician or ophthalmologist is the 'scope findings in the optic disc. Papilledema is present in 100 per cent of the tumors in the cerebellum. This is true in nearly all of the tumors of the thalamus and mid-brain. Tumors in the anterior central area produce optic neuritis more commonly than those in the posterior central area. Tumors exerting direct pressure on the optic tracts or chiasma rarely produce a neuritis with papilledemic swelling, but rather a progressive atrophy with the consequent pallor of the disc. "Choked disc" is a variable symptom but when it occurs early or before other "cerebral pressure manifestations" occur, the physician should be suspicious of a systemic disease rather than a tumor being the cause, as choked disc appears late in practically all tumors of the brain, if at all, and when it does, headaches, diminution of vision, concentrically contracted fields in addition to the tortuous enlarged veins, contracted arteries, white or hemorrhagic exudates, irregular and swollen disc are present to clinch the diagnosis. The physician should recall to mind that in primary optic atrophy (no preceding inflammation) the disc is flat or "saucered," gray or white, the lamina cribrosa is visible and the blood vessels are not contracted or enlarged. As before mentioned, it is usually seen when a tumor exerts direct pressure on the tract-nerve systems, but the most common cause is locomotor ataxia, then general paralysis of the insane and multiple sclerosis. In secondary optic atrophy, which is always the result of a papillitis or

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neuritis, and in which the disc is irregular and swollen, the condition may not be seen until the atrophy presents a scopic view that may be confused with the one in a primary atrophy. The physician will make no mistake in seeking counsel early for if the ophthalmologist is to be of service he must observe the early as well as the progressive manifestations.

Meningitis (Dural, Pial, Simple or Specific, with or without Abscess) Lethargic Encephalitis ("Sleeping Sickness") and the Eye.—The loss of vision in these cases is largely from pressure. There are papillitis, swelling of the lids, conjunctival injection, hazy cornea, early contracted pupils (later dilated), possible retinal hemorrhages and a variety of ocular palsies, especially a paralysis of the third and sixth nerves with consequent strabismus. In "sleeping sickness" partial or total paralysis of accommodation and bilateral ptosis of the upper lids are pointedly characteristic.

Hydrocephalus and the Eye.—There are, rotation downward of the eyeballs due to pressure; usually bitemporal hemianopsia, optic neuritis with the usual ophthalmoscopic picture of swollen disc, and usually a secondary optic atrophy. However, if progress is slow, primary atrophy will result. Strabismus is usually present and every form of nystagmus.

Ophthalmoplegic Migraine and the Eye.—This is possibly a misnomer as the paralysis is due to a basal lesion and the sensory symptoms, reflex and direct, are not characteristically migrainous. There is a primary stage of head pains with many functional eye symptoms as muscae, scotoma scintillans, and photophobia, following which the third nerve evidences partial or total paralysis, with ptosis, strabismus, loss of accommodation, and pupillary dilation. Of consequence the light, convergence and accommodation reflexes are absent. Not infrequently hemianopsia is present.

Multiple Sclerosis and the Eye.—In this disease, in its early stages, one may be said to depend for a diagnosis wholly upon the services of the ophthalmologist, due to the numerous eye symptoms present or elicited by tests. Most pathognomonic is nystagmus or ocular ataxia, the latter similar to the nystagmus of intention, it being absent when the eyes are at rest. It is seen frequently in tabes dorsalis. Central scotoma is also characteristic and associated with it to some degree, is red-green blindness. Irregularity of the pupil and paralysis of the sixth nerve are commonly present. Optic atrophy, though slow and late, is present in more than half of the cases.

In practically all cerebral nervous diseases and in many of cordal origin, including Graves' disease, there are present ocular symptoms all of which may aid the internist both in diagnosis and in treatment. It therefore behooves one to be conversant with the possibilities and probabilities or seek the advice of the osteopathic ophthalmologist.

One should know that a scotoma or change in the size and shape of the visual field, varies from time to time in hysteria, and that in all acute retinal disease of temporary origin this is also true. One should know that in differentiating between a "blindness" due to exhaustion and one due to a lesion in the brain, or in the eye primarily, that a "reading test" or "copying test" for several hours may be the only means by which the symptom "blurs on use" may be traced to the real cause.

One should remember that pupils may fail to react to light because of complete posterior annular synechia, the result of a previous iritis, and in this connection bear in mind that a lesion far back in the optic tracts will not affect the pupillary action though optic atrophy may be present. Also that the pupil will usually contract with convergence even though it will not do so when light is flashed in the eye, in optic atrophy.

One should know that in many nervous diseases the patient exaggerates his symptoms, therefore a knowledge of tests for simulation should be at command. One should know that central vision may be even better than 100 per cent and the patient have lost 90 per cent of the visual field. One should know that the greater the loss of vision, the greater the dilation of the pupil, to the limits of dilation. However we observe, many who, with full dilation (not due to drugs), have normal eye grounds, normal fields and normal vision.

One should remember that if he takes charge of a case he assumes responsibilities that may be costly to the patient and to himself. If as a general physician you insist that the patient agrees to call counsel and he insists in turn that you continue to manage and prescribe without counsel, have it reduced to writing, as only in this manner can you estop the patient from legal action, should he choose to undertake it. Of course a contract that a malpractice suit will not be brought in the event of failure, is void.

Vascular Disease and the Eye.—In general arteriosclerosis, hypertension and nephritis the arteries of the fundus become tortuous, beaded, and the white streak broadened. The veins are also tortuous and show compression where crossed by an artery. They have white stripes on their walls. There is proliferation of vessels as the disease progresses and numerous varices appear. Retinal hemorrhage may occur. If they are deep they appear rounded while if superficial they form "splash"-like figures. Grayish or white spots indicate areas of edema, usually above and to the temporal side of the nerve head. If the disease is advanced areas of opaque white may be present. If there is atrophy and absorption the edges may be black.

Acute Nephritis, Chronic Interstitial Nephritis and the Eye.—Blurring of vision is the chief eye symptom; rarely there are fundus changes in the acute form with fevers or pregnancy. The interstitial form presents edema, hemorrhages, tortuous vessels, hazy muddy retinæ, the nerve head ill-defined, and spoke-like, white spots in the macular area forming a wheel with the fovea as the hub. This "stellate" figure may be incomplete and resolve into a mere pigmentation if the cause is controlled early, otherwise atrophy, affecting the nerve as well, may ensue with serious impairment of vision.

Diabetes and the Eye.—Retinitis rarely occurs. When it does it is usually in the late stages of diabetes. The signs are similar to those of nephritis but milder. The stellate figure is absent. There will be a few small round white spots in the macular region and hemorrhages varying from punctate to extensive extravasations of blood. Vascular and renal disease may develop later and produce the eye ground picture of that disease.

Syphilis and the Eye.—Chorio-retinitis is perhaps one of the most common eye diseases associated with lues, in both the hereditary and the acquired forms of the disease. Small pin-point opacities are seen in the vitreous with a +7-D., holding the 'scope at about six inches from the eye. The same may be seen in the lens with a +16-D., at two and one-half inches distance. There are present the usual changes in the nerve head, of a neuro-retinitis—swelling and haziness. The retina has a hazy appearance, with gray or white spots, the latter often having black or pigment margins and areolæ. The vessels may evidence a tortuosity, broadening and cross-points obliteration. The ground findings are so variable as to present every form of fundus inflammatory pathology.

In hereditary lues the picture is one that may be termed a pigmentary retinitis. The so-called pigmentary retinitis of "unknown cause" may in all instances be luetic, however, there is no logic that should exclude any toxin as unable to produce this lesion. In the early stages the patient is conscious of a "ring" in the field of vision. His vision is aggravated on dark days and at night, and in the course of the disease the field is narrowed down to a tube-like view. The pigmentary changes are found in the periphery of the eye-ground as in an anterior chorioretinitis. The pigment leaves the pigmentary layer of epithelium of the retina to become disseminated through the nerve layers assuming many shaped figures. This change uncovers the choroidal vessels leaving them exposed to view as a characteristic finding in this disease, while the macular region is involved late. Vision becomes progressively less until total blindness ensues. However the patient may have 100 per cent central vision very late in the disease. Both eyes are usually affected early in life when the changes are first manifested.

Functional Manifestations of the Eye and Systemic Disease.—The toxic amaurosis may be classified in this group. A variety of sources as uremia, infected teeth, tonsils, colon, drugs, alcohol, tobacco are in a great measure responsible for the "weakness" of the eyes, "flashes of light," muscæ, temporary squint, convergence, insufficiency, exhaustion of accommodation. However, bear in mind that these so-called functional disorders may be the forerunners of a more serious pathology. Hysterical amblyopia evidences a loss of vision with contracted fields. Nervous asthenopia occurs in very nervous subjects. Blepharospasm, winking of the lid, almost continually, photophobia, ocular fatigue and an "utter hopelessness" that the condition can be cured will demand that counsel with an "absolute authority" be held which procedure will do much to turn the patient's outlook, and will usually enable the physician to correct the underlying systemic condition, and cure the patient's eyes.

In conclusion: If the general physician is so situated that he cannot refer the diagnosis and treatment of dacryocystitis, ectropion, entropion, trachoma, vernal conjunctivitis, strabismus, corneal ulcers, iritis, cyclitis, uveitis, glaucoma, cataracts, fundus disease, and many other, but less serious eye

pathology, he should be honest with himself, the patient and the profession by becoming thoroughly familiar with the findings in each disease, know and understand the cause, the pathology, the course, complications, and end result, and be prepared either to successfully treat the disease or inform the patient that the treatment is temporizing in value only, until arrangements may be effected when the proper treatment may be administered.

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Foot Section

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TECHNIC OF GETTING THE RIGHT SHOE ON THE RIGHT FOOT*

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II

Next we must know shoes. At least we should have located all reasonably good shoes carried in stock in our vicinity, and should have definite information about types of shoes that are best suited to the various conditions of feet and the various uses to which they are to be put. Social differences must be taken into consideration. The society lady, the nurse, the business woman, all require different types of shoes, and to produce them, the lasts must be designed best to supply the needs.

In the days of the itinerant shoemakers who went about "whipping the cat," and the custom bootmaker, who took orders for fine boots, it was customary for each individual to have his own lasts and patterns in which changes were made from time to time as the circumstances demanded. But as ready-made shoes became popular and people began to buy their shoes from ready-made stocks, it became more important than ever that the lasts and patterns should be as near the correct average as possible.

Shoe measurements began, according to a legend, when King John of England stamped his foot on the ground and said, "There is a foot; let it be the measurement from this time on." And so it was, for so far as we can determine, no standard last measurements were ever adopted until 1886, when a group of shoe last-makers got together and arbitrarily adopted a standard of last measurements, grading sizes and widths, which standard is still the basis of all sizes.

With the changes in civilization, occupation and environment, it was found that variations must be made for feet with low insteps and narrow heels, and as a result, we have the combination lasts that we hear so much about these days, which mean that the heels are two, or in some cases, three widths narrower than regular, in proportion to the ball measurements.

With the coming of shoe stores catering to the trends of fashion, many of the fundamental principles of shoe measurements were lost sight of, and the style element was so strong that without realizing what was happening, millions of perfectly good feet were ruined by wearing the pointed toes and high heels that came into vogue. Then there was the very large demand for comfort shoes to take care of the wrecks that had resulted. Thus again necessity brought into existence many of the comfort and corrective shoes. But before taking up the types of orthopedic shoes, we will consider the types of construction so that we may be familiar with the types of shoes that can best incorporate the orthopedic features.

There are three general classifications: Welt, turn, and McKay. In the welt shoe the strong firm insole is the real foundation of the shoe. The insole is tacked on to the last and the upper drawn over and sewed to the groove on the edge of the under surface of the insole. In this same operation a strong, narrow strip of leather is sewed to the insole and upper, and is known as the welt, and to this the outer sole is stitched. The last remains in the shoe until it is finished. This feature gives a uniformity to the shape of the shoe.

The McKay shoe is of about the same general construction as a welt shoe, but it is sewed with the lasts out of the shoe. The insoles are much lighter and the welt is only an imitation to finish the upper edge of the sole. The construction is not as rigid as the welt, because the lasts are not kept in the shoes as long in the making; and they do not hold their shape as well.

Turn shoes have but a single sole. They are lasted and sewed wrong side out and turned while the soles are still damp and flexible. Then they are relasted and finished. This procedure makes a flexible type of shoe and when this manner of construction is used with a sensible last, the result is a very comfortable shoe. But nowadays we scarcely see turns except in high grade evening shoes, with high heels and "vicious" toes.

What I shall have to say about corrective shoes will refer mainly to the welt construction, of which there are several types and combinations of types. But mainly they may be divided into three major groups named in order of their development: Cushion sole, rigid shank, and flexible shank shoes. There are such combinations as flexible and rigid shanks, and rigid shank with long inside counters and semi-rigid shanks with long inside counters and the latter in combination with cushion-sole construction.

Cushioned sole shoes were the first type of comfort shoes to be adopted. They have all these years been popular, and are of great value in certain particular cases. These shoes are built with a felt cushion, covered with thin leather, to give the effect of a soft mattress for the whole foot. This construction can be and is applied to both the flexible and rigid shank types. The yielding support is very restful to the tired or sore foot. Where a rigid arch support construction is required, this type of shoe with a long counter on the inside is a splendid shoe to use. The yielding support of a well constructed cushion shoe is a real luxury to any one who spends much of his time on his feet.

Particularly is this type of shoe construction of value to barbers, floor men in stores, ticket agents, bookkeepers, and last but not least, osteopathic physicians.

The next type to develop was the rigid, built-in shank arch support, and this at first was just a stiffening of the shank. Then came the rigid arch supports to be worn inside the shoes. Then various manufacturers began making shoes with built-in arches. This necessitated the changing of lasts again, and much experimenting to get the shank just high enough to allow the support required, and yet not high enough to cause pressure pain on the structures in the arch of the foot.

Rigid shank shoes have given much relief to the footweary, and without osteopathic care of the feet would be of necessity the best possible aid for some foot conditions. This is the reason that for so many years this type of shoe and the removable arch supports have met with so much popular favor. The success of this type of shoe has been largely due to the immediate sense of relief felt by the wearer. This relief is the same as that of a corset to a bulging abdomen or a crutch to a lame leg, and should be used only until the underlying cause can be corrected. Be sure that these shoes are used only when absolutely necessary, and are very carefully fitted so that there will be no pressure in the shank that will in any way interfere with the blood supply to the foot when the foot is at rest. The ultimate result of the continual use of this type of shoe is that the muscles of the arch become further weakened through lack of use and poor blood supply, and eventually it may be necessary to resort to padded and cushion-sole shoes in the extreme cases. However, if your patient is a painter for instance, don't allow him to stand all day on the rung of a ladder in flexible arch shoes. Here is a place for the support of a rigid shoe, having him use flexible shoes going to and from work. Often such unusual circumstances of occupation have a decided bearing on the type of shoe recommended and advice given.

Flexible shank shoes suit more cases than any other one type, and would be suitable for nearly all cases were it not for the fact that many of our patients must of necessity stand or walk at their work. In some of these cases it would be disappointing to the patient and little short of disastrous to the physician to prescribe flexible arch shoes for continuous use. However, in most of these seemingly impossible cases, by proper bony adjustment and attention to the nerve and blood supply of the foot and institution of suitable foot exercises, it will be possible to start the gradual use of flexible shank shoes and eventually get the patient to using the flexible shank shoe altogether, which of course is the real test of cure

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of the condition and the best way to prevent its recurrence.

Custom shoes, particularly those for deformed feet, present a variety of problems. These cases should be taken only when it is possible to have the help of a good shoemaker, who thoroughly understands his work. It is not so hard to handle cork extension heel and foreparts where it is only a matter of overcoming a short leg, but with an ill-shaped foot, when a plaster cast has to be made, it is rather difficult to secure good results. Each case presents its problems. There are, however, many cases of slight congenital shortening of the bones of the leg, and it is very essential that this difference in the length of the legs shall be made up by raising the heel. It is easy to overlook this condition if we are not constantly on the watch for it, and if neglected we will find it impossible to keep spinal lesions corrected.

During the past twenty-five years great progress has been made in the matter of development of correct and corrective footwear. There have been developed a great number of shoes designed for some specific purpose, as well as the many arch aids and appliances, and without any doubt all of these have served a useful purpose, yet the problem still remains to educate people to the fact that there is a particular shoe for their particular feet, and that it should be as carefully fitted as glasses or a set of teeth. No other item of wearing apparel can possibly bear more intimate relation to the health and comfort of the individual, and therefore the type of last and style of shoe should be considered by thoroughly competent men and the shoes fitted with care and accuracy. To this end I propose the slogan, "the right shoe on the right foot."

For all but a few specific cases my advice is to own a variety of kinds of shoes carefully selected to answer the requirements of the varying program of the day. Habits of life, environment and social status will have their bearing of course, and due allowance must be made.

FOR MORNING WEAR

For morning wear, and by morning wear I mean for that part of the day when one is on his feet most, either standing or walking, shoes should be selected that are broad at the ball and toe and have medium low heels. This will give the muscles of the foot their proper amount of freedom and allow the bones of the foot to take their proper position in walking and passive support of the weight of the body.

FOR AFTERNOON WEAR

For afternoon wear a little more stylish shoe may be used, but always insisting on having a shoe that is straight on the inside, and by this is meant a shoe with the inside of the sole straight forward from the ball toward the toe and without a swing to the middle line of the foot. Be sure that they are correctly fitted and remember that a shoe that is big enough looks better on the foot than one that is tight and gives the appearance of restraint.

FOR SPORT WEAR

For tennis, golf and hiking, the usual shoe that is offered is correct. They are usually made with a full-shaped last and low heel and the main consideration is to have them comfortably fitted. Best results will be had by wearing heavy hosiery, as this will protect the foot from possible abrasion on account of the more strenuous exercise.

FOR EVENING WEAR

This is the type of shoe that we are seldom asked about. The dictates of fashion are so much more in authority that the physician seldom has a chance to influence the selection, but for those who are really in earnest about giving their feet the best chance possible, there are always the lower heels, and those which have fairly straight inside lines. These shoes are far less damaging than the extreme high heels and narrow foreparts that swing strongly to the outside. Most normal feet will not suffer from a moderate amount of wearing of even the more extreme evening shoes, if proper shoes are worn at other times. But it is best not to tempt fate too far even in this line.

Before we can recommend shoes to our patients intelligently, we must not only understand the principles that are incorporated in the various types, but we must understand the conditions for which each type is best suited. To adopt one shoe for all our foot cases would be as unreasonable as for a general hospital to stock its medical supply room with ether and aspirin tablets only, and with these two drugs expect to take care of all the various cases that might come in.

Now let us consider some of the underlying principles of all correct orthopedic shoes. First, the general shape should conform to the anatomy of a normal foot; second, the insole should be flat and full width, particularly in the shank and ball, with a full out-swing on the outside of the shank; third, the inside line of the forepart should be straight with the heel or at least parallel to a line drawn through the center of the heel and the second metatarsal phalangeal joint; fourth, the restraining forces should be so arranged that they will not be directed against joints, but at right angles to the long bones of the foot; fifth, they must be comfortable.

Osteopathic physicians could formulate a lot of rules about shoe fitting and they might be scientifically correct. It is certain that we should be continually striving at a more scientific approach to the problem of shoe fitting.

However, if we will approach our retail shoemen on a basis of practical coöperation, we will find a responsive attitude for the most part, and much good can be accomplished. They are studying the same problems that we are and as we get acquainted we will find that we have many common interests. Only recently I read an article in the *Boot and Shoe Recorder* for June 18 by Mr. Nathan Hach of Detroit, who has made a study of foot classifications for the past seventeen years, and he says, "Know your customer's feet first." This sentiment is certainly suggestive to us. Mr. Hach recognizes racial, cultural and occupational differences. He also has made very careful deductions in regard to the foot that has grown in length.

Correct shoes may be worn without the sacrifice of real beauty if we will consider the real elements of beauty. Grace and freedom of action and rhythm of motion contribute much to beauty. These are absent in the majority of women on account of the restraining and deforming elements of shoes, while the native Indians stand, walk, and run with great assurance and dignity and even majesty, wearing only the primitive moccasin which in no way restricts, but only protects the foot from injury.

Each type of corrective shoe is designed for some special condition, and since all foot troubles are not the same, it is folly to assume that one type of corrective shoe will answer all types of foot conditions. Further than this, the same condition may be the result of a variety of causes or combination of various causes, and the treatment must take into consideration the cause. This is comprehensible to any osteopathic physician. For instance, "broken arches" may be due to direct trauma, sudden strain, or long-continued strain, and a gradual yielding of the arch,—or it may not be due to any unnatural strain, but simply to a lack of tone and support. And here again we may find various causes. Perhaps it is a general debility and consequent lack of muscle strength, or local debility due to insufficient blood supply to the muscles of the foot, or it may be due to either general or specific nerve involvement.

Surely it is evident that in connection with osteopathic treatment of the feet it is necessary that properly fitting shoes are worn and that they are so constructed as to be an aid in the correction of the existing condition. It is evident that one must make a study of the types of shoes available and secure the best possible coöperation of his local dealer, preferably one who has had good experience in fitting of shoes and will give proper attention to your patients. For if shoes are not properly fitted they will do harm, no matter what type or style you may select.

Let us not think we know all about fitting shoes because we know a few of the rules. We could, no doubt, teach a shoe dealer to give a foot treatment. He could learn a routine technic and we might find a few individuals who could be made to think they could treat feet osteopathically. But could they? Well then, should we discount the experience of a shoe man who has been fitting shoes for years? No, let us get his coöperation and work with him, but let us put him first with the customer-patient when it comes to fitting the shoe. Differ with him if you must, but never let the patient know it. Talk it over privately and diplomatically by yourselves, but let us never assume responsibility for the fit of a shoe. If it isn't all right we can't make good. We don't have

the shoes to do with, and we have responsibility enough in connection with our work.

The very best basis of coöperation is a careful and thoughtful consideration of the best interest of the customer-patient. If the shoe man is worthy of your cooperation he will accept it only on that basis. Any arrangement that depends on a bonus for shoes sold, or compensation for customers referred as patients, leads to disaster, and any one who is willing to make such arrangements, in my opinion is not worthy of confidence, be he merchant or physician.

My suggestion is, pick out the shoe men you would like for friends, and remember the old saying, "If you want a friend, be one." Know his line of shoes and when you have a patient who can use a pair to advantage, tell him about them and explain why you think that particular shoe is right for his foot. It won't be long before you will have a chance to explain to that shoe merchant the work you, as an osteopathic physician, can do for feet, and eventually your new friend will have confidence to recommend your work. But look out for the fellow who is ready to recommend your work before he knows anything about it.

Case Histories

LESION OF THE LENTICULAR NUCLEUS

THOMAS J. MEYERS, D.O.
Pasadena, Calif.

Patient: A. G., male, aged 75. Seen at home on August 22 by another physician in response to call. Severe vomiting attack and apparent sudden weakness set in. Two days later I examined patient. There was presented an old man, rather emaciated, in bed, lying on his right side and extremely restless. He could not speak. Sounds would come in grunts. His whole body would writhe in an attempt to articulate his words. His face was almost cyanotic and his heart pounded laboriously. Initial blood pressure 265/150, pulse 95, respiration 25, temperature 99.5° axillary, by previous physician, who left with assertion that nothing could be done. At time of my examination two days later, blood pressure was 195/130. Patient appeared somewhat stuporous but seemed to understand what was said to him though it was evident that there was intellectual impairment. Eyes were glassy with a thin mucous film over them. There was practically no palpebral function. Teeth were out, tongue coated and deviated sharply to right. Nose and ears were not examined. There was a marked cervical lymphadenitis. The blood vessels of head and neck were very sclerotic and tortuous. Chest was symmetrical but wasted—excursion limited. Rather a marked kyphosis, the apex being at 2nd thoracic, was noted. Heart was noisy but regular. There were many valve leaks almost impossible to differentiate. Rhythm was fair. Extremities did not show edema or anything of significance. Skin presented areas of a blotched erythematous appearance. The nose was quite red, the supramaxillary areas of the face flushed. In general, skin had a clammy unpleasant feel—easily perspired. No eruptions, bed sores or pigmentations. Spine presented a rigid neck and upper thoracic, movement being in the 7th cervical and 6th thoracic vertebrae. Lumbar region quite rigid. Aside from the occipital and midthoracic regions there was little tenderness. Neurologically, all reflexes were present on both sides but were somewhat diminished on the left. The triceps could not be elicited on left, nor was the umbilical obtained. General peripheral circulation was fair. Autonomic symptoms suggest vagotonia. Mentally there was some impairment both in intellectual and memory functions.

History: Patient was a retired merchant, but had been a miner and had enjoyed almost perfect health until the age of fifty. Then petty ailments began to manifest themselves in the form of heart and digestive disturbances. At sixty-five years of age, he was operated on for appendicitis. Condition continued fair until three years ago when he suffered a stroke of apoplexy with right-sided paralysis and resultant aphasia. He was hospitalized for eight weeks at the time but was never quite normal after. The paralysis gradually subsided and he was able to be up and around. He became stubbornly irritable, his angry outbursts gradually becoming something to be feared. He had to be dressed and helped. He had two minor strokes or relapses but never much paralysis. Digitalis was prescribed at the time of his first break and continued throughout. Sort of an apraxia set in which was quite distressing.

My diagnosis was degenerative lesion of the lenticular nucleus.

Course: Emergency treatment given by the attending physician and which so effectively stopped the vomiting and lowered the blood pressure, was cessation of food; nitroglycerin given per hypo, with a regulation of digitalis therapy.

On coming on the case two days later, I suggested the subsequent regime: The environment was put in order, the family reassured and prepared for demise if such should occur, digitalis and all other drugs, with the exception of cascara, 5 grains daily for the bowels, stopped. Osteopathic joint movement daily which was of the gross type, there being such a marked rigidity that individual joint movement was slight. There was some sidebending possible in the second and third thoracic and third and fourth cervical. Under the regime this movement was increased only slightly. No forcible corrections were made. In this way the circulatory apparatus was stabilized and the blood pressure carried well at 160/120. Due to dysphagia, feeding was difficult. Mellin's food and whiskey were given. Evidently, patient did not relish taste, so whole milk was substituted. The patient was extremely restless and it became necessary to prescribe opiates for sleep. As he grew stronger, he became more and more difficult to handle. A restraining sheet became necessary at night. On September 4 he took a turn for the worse. Prolonged general muscular stretching and relaxation and cervical manipulation, as above were tried and this gave easement for a moment or two. However, nothing but opiates seemed able to relieve the extreme nervousness. He sank lower and lower, going into a coma. Hypostatic pneumonia set in and he died on September 6.

At autopsy, the brain demonstrated an advanced state of arteriosclerosis mainly in the distribution of the posterior and middle cerebral arteries. The vertebral arteries were very brittle. Sclerotic patches were irregularly placed along the vessels and were of a dirty yellow color. Careful macroscopical sectioning of the brain failed to reveal any gross lesions as one would expect from an old hemorrhage. The left claustrum and lenticular nucleus presented a peculiar speckled appearance localized in the center of the region. These specks were white and seemed sclerotic. The left Island of Reil opposite the degenerative areas of the lenticular region, a spot about one-half inch square suggestive of softening changes was noted. Two tiny cavitations were demonstrated in the right Island of Reil and a larger one, containing a clear fluid in the middle of the pons. Nowhere was there evidence of a hemorrhagic lesion though areas of Broca and Wernicke as well as the basal ganglia were carefully examined for such. There appeared a tendency to diffusion of the pial vessels over the right area of Wernicke. The whole brain was slightly shrunken and the pia peeled from it quite easily.

Chest: Well developed lungs but of a brilliant bluish speckled color with small encapsulated cavities in the apices. The heart was enlarged and the coronary vessels extremely sclerotic. The aortic valve was sclerotic and brittle—the mitral less so. The left ventricle was about three times the size of the right.

Conclusion: In this case, more good was done by reassuring the family than by actually treating the patient. To this day they are grateful for that service.

Autopsy confirmed the clinical diagnosis and suggests again the function of the lenticular nucleus as a center of speech control. The whole symptomatology in this case is predominantly autonomic. There is much here to match Fishberg's hypertensive encephalopathy picture and to add stimulus to an impetus to understand more thoroughly the diencephalic relation of the autonomic nervous system. Francis X. Dercum* has given pertinent pointers as to the significance of the lenticular nucleus in symptoms presented by this case. He compared the developmental sequence of speech and the onset of speech symptoms of this syndrome. He holds that, being automatic they are controlled by the lower and more primitive mechanism, that is, the basal ganglia, and therefore subject to changes from lesions of this area. It should be our aim as osteopathic physicians to apply our system of therapy in the form of maintaining the movement of body fluids rhythmically and constantly.

Painter—Meyers Osteopathic Institute.

*Dercum, Francis X.: Lesion of the left lenticular nucleus and adjacent structures. *Arch. Neur. and Psych.* 12: 601 (Dec.) 1924.

Current Osteopathic Literature

Abstracted by Edward S. Gardiner, D.O.

THE WESTERN OSTEOPATH, GLENDALE, CALIF.

27:1-20 (August) 1932

*First Rib Lesions. G. V. Webster, Los Angeles.—p. 9.
*Epilepsy. E. S. Merrill, Los Angeles.—p. 9.
Tuberculous Peritonitis. H. E. Lamb, Denver.—p. 11.
Carotin—Precursor of Vitamin A. H. D. Boddington, D. Sc.—p. 11.
Iritis and Glaucoma. S. G. Biddle, Los Angeles.—p. 13.

Rib Lesion.—Webster describes in detail the mechanical principles and their application in the production and correction of first rib lesions.

Epilepsy.—Merrill says there are three factors involved in producing convulsions: (a) "Convulsibility," which is a functional instability of the brain; (b) organic abnormalities of the structure of the brain; and (c) organic abnormalities of the body outside of the brain. The structural disturbances include congenital brain disease, trauma, tumor, parasites, syphilis, tuberculosis, cerebral abscess, brain swelling, meningitis, leptomeningitis, arachnoiditis, encephalitis, multiple sclerosis, gliosis, senility, toxins, but such pathology alone does not cause epilepsy. The lesions found in the brain are not constant and according to Ford may be the result and not the cause of convulsions. Merrill discusses some of the factors which bear inconclusive evidence as being direct causative agents of epilepsy, including brain tissue abnormalities, functional abnormalities, malfunctioning of heart and vascular system, gastro-intestinal toxemia, basal metabolic rate, increased adrenal secretions, syphilis, specific toxins, and acidosis and alkalosis. Contributing factors include daily variation in hydrogen ion concentration of the blood, oxygen consumption, blood sugar curves, instability of the sympathetic nervous system, poor posture, constipation, anaphylaxis, disturbance of the water balance, increased intracranial pressure. All these factors may have an influence upon the manner in which the body reacts to certain stimuli. Jelliffe and White call it an epileptic constitution, or an "abnormal convulsive capacity," which is present in every person subject to epilepsy. This quality itself varies for individuals and sometimes varies in the same individual.

THE OSTEOPATHIC PHYSICAL THERAPEUTIST PHILADELPHIA

2:127-162 (July) 1932

Physical Therapy at Detroit. A. C. Boehm, Chicago.—p. 131.
The Eustachian Tube, Labyrinth and Deafness. C. H. Muncie, New York City.—p. 133.
*Ambulant Rectal Surgery by Galvanism. J. L. Hanson, Philadelphia.—p. 135.
Modern Nomenclature. F. H. Humphris, M.D., London.—p. 139.

Ambulant Rectal Surgery by Galvanism.—Hanson recommends the use of the galvanic current for treating hemorrhoids. Familiarity with the anatomy and physiology of the rectum and surrounding tissue, he says, is essential. The galvanic current should be turned on slowly to avoid shock and the electrode should not be removed until the current has been shut off. Care should be exercised to be sure that the negative pole is used for the active electrode.

THE JOURNAL OF OSTEOPATHY KIRKSVILLE, MO.

39: 489-548 (September) 1932

A Visit to Dr. Locke. G. W. Goode, Boston.—p. 494.
*Mechanical Fundamentals. H. E. Litton, Kirksville.—p. 500.
What Is Chronic Disease? C. E. Abegglen, Walla Walla, Wash.—p. 504.
The Influence of Lower Cervical and Upper Dorsal Lesions Upon Antibody Formation. Research Series No. 50. W. J. Deason, Wichita, Kan., and Mr. G. H. Kroeger, Kirksville—p. 513.
Goiter. H. E. Lamb, Denver.—p. 515.
The Good Old Days. W. J. Novinger, Elmira, N Y.—p. 519.
Dangers and Responsibilities of Physicians. Mr. H. E. Sampson, Des Moines.—p. 526.

Mechanical Fundamentals

One of the first things to establish in a study of joint mechanics, according to Litton, is the axis of rotation. Tasker, Guy and other writers are wrong, he believes, in endeavoring to establish the axis of rotation for a given joint by running radii from the joint surfaces of both articulations and assuming that the point where they intersect is the axis of rotation.

If this were the correct method, Litton says, then if the axes of rotation were posterior, the radius drawn to the anterior edge of the vertebral body would be longer than that extending to the articular surface, which would mean that if the superior articulating surface were moved an eighth of an inch upon the inferior, the body of the superior bone would have to move in the same direction even farther and such a condition would easily appear upon x-ray examination—which it does not.

Litton therefore upholds the views of Burns, Taplin and others that the axis of rotation for a given articulation is in the nucleus pulposus. He goes at length into a favorable discussion of the "joint seal" theory without mentioning Taylor who discussed it at some length in *The Journal of Osteopathy* for December, 1931.

The most important part of Litton's conclusions, perhaps, has to do with what he conceives to be the peculiar angulation formed between the two articular surfaces when a lesion is produced. He believes that they are carried beyond their normal range of movement resulting in breaking the supposed "synovial seal" and over-stretching the capsular ligament, both of which events take place before a point of subluxation in the accepted sense is reached. The immediate result is the establishment of a nerve reflex producing a flow of nervous stimuli into the cord segment and bringing about a "veritable splinting process" by muscular contraction. This nerve reflex is held to complete a vicious circle which is maintained until the facets are realigned. Correction of the lesion may be accomplished by directly repositioning the articular surfaces, but where a great amount of muscle spasm exists, it is necessary to use soft tissue manipulation until the spasm is overcome.

R. G. H.

Current Medical Literature

DEHYDRATION IN ECLAMPSIA

The relation of eclampsia to body fluid imbalance sheds a ray of light upon this long-feared complication of pregnancy. Many theories have been advanced but have failed in their application at the bedside of those afflicted with this baffling syndrome. The fact that cerebral symptoms are first manifested and convulsive seizures follow has led J. O. Arnold and Temple Fay to investigate the problem from this angle.[1]

Pathologic studies of eclamptic brains show a cerebral edema, not much different than those found in acute alcoholic wet brain, status lymphaticus, acute toxic hydration, and status epilepticus in children, and the authors further state that the terminal cerebral symptoms are similar throughout this entire group. In their search for a common factor responsible for the predisposition of the patient to a convulsive seizure, they have been narrowed to the "fundamental relationships between fluid (edema), oxygen, and the acid base variations with their local effect on capillary circulation and permeability."

Even in the presence of renal insufficiency it has been the too frequent custom in the past to supply fluids to the patients without considering their possible ultimate elimination. Of course the skin and bowels are usually able to meet the renal decompensation but the authors point out that in the advent of some sudden curtailment in skin function (cold weather—hyperthermia and dry skin) a fluid retention may occur. Statistics show a high incidence of eclampsia in the early winter months.

Diet is an important factor in maintaining a proper fluid balance. Foods high in water content and concentrated carbohydrates such as ice cream, candy, syrups, sweet desserts and so forth should be avoided, as they favor water storage.

This water imbalance theory as a causative factor for such cerebral symptoms is not at all new, but the authors of the paper in question have most clearly demonstrated it with case histories and other statistics. They quote Rosenstein[2] as saying that "the blood of pregnant women is normally increased in quantity, but is of defective quality,—being, in fact, too watery. . . . . eclamptic convulsions are not occasioned by poisons in the blood, but result from cerebral anemia, which in turn is a consequence of cerebral edema." In the latter months of pregnancy there is usually a hypertension of the vascular system which Rosenstein says is a factor in producing the cerebral hyperemia. Fur-

ther, he believes that "the pressure of this edema reacts so as to prevent the dilatation of the cerebral vessels traversing the edematous areas, and anemia is the result." Arnold and Fay point out that if this anemia occurs in the cerebrum, coma results, if in the motor areas, convulsions result.

Other investigators have trephined the brain of three acute cases of eclamptic convulsions and have noted a marked cerebral edema. Improvement in the convulsive seizures have followed drainage. DeLee[3] (1928 edit., p. 386) in discussing the theory of increased intracranial pressure as the cause of these symptoms calls it "a very plausible theory and one that if proved, would give us rational methods of treatment." Williams said in 1921 that "the long sought for cause is undoubtedly water." He raises two objections however (1930, p. 668[4]), first, "that it does not explain the production of the characteristic hepatic lesions" and the second, "that it takes no account of the cases of eclampsia without edema."

Arnold and Fay say that there is no direct evidence that the hepatic lesions produce the cerebral manifestations, and they are not persistently constant in eclampsia.

For treatment, patients have been divided into three groups: (1) the moderately pre-eclamptic; (2) the dangerously threatening pre-eclamptic—(a) without chronic nephritis, and (b) with nephritis; (3) the actively eclamptic or convulsant group. The steps used in treatment are given as follows:

1. *The Moderately Pre-Eclamptic.*

Patients with definite signs of hypertension, albuminuria, edema of the extremities, headache, and beginning visual disturbances have been placed in this group. In several of the patients all of these symptoms were present, while in others there was only a sufficient number of them to arouse apprehension regarding the further progress of the pregnancy.

a. The total output of urine for 24 hours is measured and charted. (Patient is placed on a minimum of intake or denied fluids entirely during this 24-hour period.)

b. Total fluid intake (water, tea, milk, coffee, soup, fruit juices, and other beverages) is regulated so as not to exceed the amount of urine output for the first 24 hours.

c. As far as practical, the level of fluid intake is maintained so as to equal and balance with the previous day's output. An accurate chart record is made of the intake and output of fluid and the patient is weighed daily.

d. Moderate dehydration is accomplished with small daily doses of magnesium sulphate (saturated solution). The liquid volume of this dose is not to be included in the daily intake chart as this fluid is lost through other than renal elimination.

e. A diet of solid foods of wide varieties including proteids is given. The patient is fed well but moderately, a salt-low diet, soft and liquid nourishment high in water content being avoided, as are also sweets and desserts.

f. Food and drink are given at 3-hour intervals throughout the day, no eating or drinking being permitted between these small meals.

This routine procedure places the level of intake of fluids at the point of maximum renal efficiency, and permits sufficient fluids in the food content to care for skin, breath, and bowel elimination. The mild purgation assists in withdrawing tissue-bound fluid from the interstitial spaces, not only in the extremities, but within the cerebral structures as well.

2. *The Dangerously Threatening Pre-Eclamptic.*

In this group are those (a) without chronic nephritis and (b) with complicating chronic nephritis.

This subdivided group includes those patients having a marked or alarming degree of hypertension, albumin and casts, and external edema, with aggravated headache, vomiting, visual disturbances, or other cerebral symptoms. It is difficult or often impossible to classify pre-eclampsia patients accurately on the basis of the presence or absence of pre-existing nephritis; yet, the history, clinical findings, and laboratory and eye ground studies, usually make such a division practicable.

The general principles of treatment are the same for group A and B, but group B requires earlier application of the treatment with more careful and persistent control of fluids and diet as the response is slower and the danger of renal suppression more imminent.

a. All fluids (and usually all food) are withheld until the 24 hour urine output is known; then an intake at or slightly below the daily output is maintained.

b. The process of dehydration is begun at once by giving intravenously 50 cubic centimeters of 50 per cent glucose, and this dose is repeated in 4 to 6 hours, if necessary.

c. A saturated solution of magnesium sulphate, one or more doses, is given by mouth until effective in watery stools. This is repeated daily, or as indicated.

d. If no marked improvement is seen in 15 to 30 hours, one or more spinal drainages is done, at 4 to 6 hour intervals, or rarely, when spinal puncture is impractical, venesection is done, the blood pressure cuff being used as a tourniquet in order to check the effect on pulse pressure.

e. A strict balance of fluid and "dry" solid diet is maintained.

This more intensive method of dehydration permits adjusting treatment to the degree of urgency apparent in the case. Many patients in this group yield promptly and satisfactorily to one or more of the measures without spinal drainage, if fluid intake is carefully curtailed, but spinal drainage should not be long deferred if headache and other cerebral symptoms have not decidedly abated within a few hours.

3. *The Actively Eclamptic, or Convulsant Group.*

We have placed under this division, only those patients in whom such an advanced stage of eclampsism had been reached that convulsive seizures had actually begun. We are not unmindful of eclamptic death without convulsions, but for clinical purposes, the more or less arbitrary grouping into three stages of severity herein outlined, has seemed best to meet the needs for practical guide in administering treatment.

a. Hypodermic injection of sodium luminal, 2 or 3 grains is given immediately and repeated in 2 hours if necessary. Morphine sulphate ¼ to ½ grains is given hypodermatically, only if absolutely necessary and only after the administration of glucose and spinal drainage have been accomplished.

b. At the earliest possible opportunity, 50 cubic centimeters of 50 per cent glucose is given intravenously.

c. The spinal fluid is drained as completely as possible (45 to 100 cubic centimeters), preferably with the head raised to an angle of 30 degrees. (When spinal drainage is impracticable, venesection, until systolic pressure drops 30 to 50 points, may be substituted.)

d. The administration of glucose is repeated in 3 to 4 hours, and spinal drainage in 4 to 6 hours, if marked improvement is not seen.

e. Magnesium sulphate is given by mouth or bowel in effectual doses.

f. Absolutely no fluids (except magnesium sulphate solution) are given for at least 24 hours, and the temperature, pulse, respiration, and pulse pressure are recorded every hour.

g. If dehydration has been thorough and effective, the uterus need not be emptied, nor labor induced or hurried, except for reasons other than the attack for which the patient is being treated.

The treatment here outlined provides (1) for a primary sedative directed toward the control of the convulsive seizures; (2) for the early use of hypertonic solutions to attract into the blood stream the tissue bound water; (3) for immediate and rapid cerebral dehydration (by spinal drainage or venesection) which is an extremely important factor, not only in controlling convulsions, but in bringing about early mental restoration, with all its advantages in the further conduct of the case; (4) the use of an active saline purge to withdraw the fluid from the blood stream reclaimed by the intravenous glucose and thus hasten a re-establishment of body water balance.

A repetition of the intravenous glucose and of the spinal drainage, with the maintenance of an accurate fluid balance, and a continuance for some days of milder dehydration by purgation, provides for the further restoration of the patient. The strict avoidance of fluid introduction by vein, skin, or bowel (enema—8 ounces of magnesium sulphate and 1 ounce of glycerine) other than prescribed is important. For complications of severe hemorrhage blood transfusion

should be done and the 50 per cent glucose administration repeated.

In their deductions, Arnold and Fay have abandoned the belief that large quantities of fluids are necessary to 'wash out the toxins' and recognize that many 'toxic symptoms' are produced by the excessive fluids themselves, inducing a 'water intoxication.'

Meyers discussed the relationship of epilepsy with a disturbed water metabolism of the body in the July JOURNAL.[5] The typical cerebral and motor manifestations are believed to be due to a mechanical pressure followed by atrophy of cortical substance.

The relationship of structural lesions in the causation of the fluid imbalance, and the intake of fluids should form an interesting investigation. We are more inclined to believe that the best osteopathic treatment in this and related conditions is a controlled, rational balance of fluid intake, as the osteopathic lesions would be secondary in point of time.

EDWARD S. GARDINER.

[1]Arnold, J. O., and Fay, Temple: Eclampsia, its prevention and control by means of fluid limitation. *Surg., Gynec. and Obst.*, 50:129-150 (Aug.), 1932.
[2]Rosenstein, Siegmund: Die Pathologie und Therapie der Nierenkrankheiten. A. Hirschwald, Berlin, 1870.
[3]DeLee, J. B.: Obstetrics. 5th edition, W. B. Saunders Company, Philadelphia, 1928.
[4]Williams, J. Whitridge: Obstetrics. 6th edition. D. Appleton & Co., New York, 1930.
[5]Meyers, Thomas J.: An interpretation of the epilepsies with therapeutic suggestions. JOUR. AM. OSTEO. ASSN. 31:435-444 (July), 1932.

Book Notices

PRINCIPLES OF OSTEOPATHY. By Yale Castlio, D.O., Professor of Principles of Osteopathy and Supervisor of Clinics, Kansas City College of Osteopathy and Surgery. Cloth. Pp. 320, with 35 illustrations, including photographs of microscopic slides, x-ray photographs and drawings, some in colors. Kansas City College of Osteopathy and Surgery, Kansas City, Mo., 1932.

This is one of the best books that has been written on the principles of osteopathy. There are numerous points about osteopathy as about any other science, which are matters of opinion and concerning which some authorities will not agree with Dr. Castlio. He says:

"Manipulative procedures have never been offered by the osteopathic profession as a substitute for all other therapeutic measures. The importance, in their place, of diet, rest, hygiene, psychotherapy, physiotherapy, drugs and surgery has never been questioned except by extremists. Osteopathy is not a system of drugless healing. It is not merely 'glorified massage'. Nor is it just a complex technic for the correction of a particular kind of pathology, the lesion" (p. 20).

"Osteopathy is that system of medicine that places chief emphasis upon the preservation of structural integrity in the maintenance of health and regards manipulative therapy as the most important single factor in the treatment of disease.

"By definition, then, osteopathy is more than manipulative therapy. It places chief reliance on this; but utilizes all methods of diagnosis and treatment that have been demonstrated to be of value. Osteopathy is not a specialty with a limited field of application. To speak of osteopathy and physiotherapy, osteopathy and drug therapy, or osteopathy and obstetrics is to use these terms incorrectly. Osteopathy is a word that denotes and includes all of these and other recognized methods of diagnosis and treatment (p. 162).

"There are many definitions of the osteopathic lesion; but few, if any, good ones. This state of affairs arises, not out of any uncertainty as to what the lesion is, but because of the difficulty experienced in excluding from the definition the things that it is not. It has been found difficult to accomplish this in a few words" (p. 22).

Dr. Castlio quotes a number of definitions and then says:

"All of the definitions given above are defective in at least one important particular. They emphasize joint disturbance and neglect to include soft tissue pathology. This attitude is a relic of a misconception that dominated early osteopathic thought before research had demonstrated the nature and extent of local lesion pathology. As will be shown in subsequent chapters, articular dysfunction is quickly followed by characteristic changes in the soft tissues around the lesioned joint, including local spinal cord segments and sympathetic ganglia. Contracted muscles, edema, acidosis, neuritis, vasomotor, trophic and metabolic disturbances make up a part of the picture. The osteopathic lesion includes all of these things, not any one of them.

"It should be visualized and thought of, then, as a roughly spherical area of diseased and disordered tissues, having as its approximate center a disturbed spinal articulation, and including within its diameter one or more segments of the spinal cord and one or more pairs of sympathetic ganglia" (pp. 23 and 24).

In connection with the definition of the lesion as with other controversial points, Dr. Castlio not only admits differences of opinion, but in some cases also quotes the opinions of others. For instance on page 249 he quotes this reviewer as follows:

"We come again to Dr. Castlio's definition of the osteopathic lesion—which to me seems too narrow. He is willing to permit the inclusion of certain joints which are very close to the spine because they produce the same local and remote changes, through the spinal cord and sympathetic ganglia, that those in the spine produce. I wish to call attention to an article, 'The Why of Osteopathy,' by Amussen and Le Clere in THE JOURNAL OF THE A.O.A. for June, 1926:

"'Every time you move, nerves ending in the used muscles are stimulated by the very contracting and relaxing of the muscles and carry this sensation of movement in to vital structures. Every time you move, nerves ending in the moved joints are stimulated by the joint movement and send this sensation to every other part of your body.'

"Although such influences may not so directly involve the spinal cord and the sympathetic ganglia, yet to me those influences are so vitally a part of osteopathy that a stiff hip or a stiff knee—at least, the type of subluxations in those joints which are so closely analagous to those which are common in the spine—is unquestionably an osteopathic lesion. Perhaps it would be putting it too strongly to say that that is particularly true of some of the joints mentioned by Dr. Castlio, the sternoclavicular, acromioclavicular and temporomandibular."

In answer to this Dr. Castlio says (p. 250):

"If any structural perversion anywhere in the body capable of setting up reflex disturbances in the nervous system is to be called an osteopathic lesion why limit the term to mechanically disturbed joints? Is not, then, a phimosis or a displaced uterus an osteopathic lesion? Indeed, I have heard them so called.

"It is true that the osteopathic physician is trained to look for and appreciate the significance of mechanical perversions wherever he finds them. It does not follow that he should attach the term, osteopathic, to such lesions. Is a congenital abdominal adhesion an osteopathic lesion?

"Perhaps that is carrying the argument to the extreme; but I cannot see where to draw the line once the criterion that I suggest has been abandoned."

Dr. Castlio says on page 167, and elsewhere, that "the osteopathic lesion produces disease in remote structures only through its influence on nervous tissues." Perhaps he should have said "directly or indirectly", because there can be little or no doubt that some of the effects of the lesion are produced through the endocrines, thus making the nerve influence indirect.

Dr. Castlio is emphatic in his belief that if mobility be brought about in a joint, its tendency is almost inevitably to normalize itself. He says:

"The success of osteopathic therapy in disease is due, in great part, to the advantage that is taken of the ever present tendency toward the normal. . . . Any change that can be induced by normalizing the circulation and innervation is likely, almost certain, to be in the direction of normalcy.

"It is this tendency that renders the empiric and the discriminate application of manipulative therapy in the form of the general osteopathic treatment so markedly successful in so many varieties of disease. This is not to be interpreted as a statement to the effect that all diseases are, or should be, treated alike" (p. 174).

Up to this point there will probably be little disagreement. But Dr. Castlio goes on to quote the well known authority who "has expressed this idea very happily and

quaintly in the phrase 'Roll the bones, and they'll come home'" (p. 175).

He seems to believe, in other words, that whether the bony lesion be one of flexion, of extension, of rotation-sidebending or otherwise, the production of apparently normal movement in the joint will result in its correction —regardless of the specificity of the application of force. This reviewer is strongly inclined to believe that Dr. A. T. Still and his most successful followers were very definite in their application of corrective movements. He believes there are many cases where lesions recur sooner or later, year after year, following treatment which seems to produce complete mobilization and in which correction is supposed to have taken place and that the chief reason for such constant recurrence is found in the fact that too many of us have accepted the idea that mobilization will result in correction.

The doctor's discussion of stimulation and inhibition is very good:

"A spinal segment may be stimulated to increased activity by increasing the number and intensity of the afferent impulses it receives. This may be accomplished by friction or percussion of the skin, vigorous massage of muscles and other underlying structures, and forceful, rapid articular motion.

"The same segment may be inhibited in function by decreasing the number and intensity of the incoming impulses. This effect may be obtained by prolonged pressure upon somatic structures innervated by the segment, or by over-stimulation to the point of fatigue. The former method is used in practice.

"Manipulative treatment characterized by the technic of the second paragraph above is spoken of as 'stimulative.' That in which prolonged pressure is a feature is referred to as 'inhibitive'. These terms, applied in this way, are misleading, since particular organs are also spoken of as being stimulated or inhibited by treatment.

"It should be clearly understood that a treatment that stimulates or inhibits a given spinal segment does not necessarily have the same effect on the organs supplied by that segment. The effect may be the same, or the opposite. . . . .

"One may use stimulation to effect inhibition, and inhibition to accomplish increased visceral activity, theoretically.

"The word, theoretically, is used advisedly. We do not in practice influence the function of organs with the ease and certainty that a description of the methods would imply. We are unable, in the first place, to confine the effects of our manipulations to selected segments of the cord. We find, in the second place, that normally functioning organs are difficult to influence; and that diseased ones are susceptible ordinarily to change in only one direction, that toward the normal. Finally, we do not as yet possess sufficient knowledge of what takes place in the body during disease, and of what the needs of a particular organ are during the course of most diseases, to apply wholesale stimulation and inhibition intelligently" (pp. 175, 176).

Though most of us think of the body's inherent, protective mechanisms as defensive when applied to any invaders, Dr. Castlio repeatedly uses the militant term "offensive," as on page 219, where he speaks of stimulating the "offensive and defensive forces to the point that the infection can be overcome."

The nomenclature he uses in his discussion of lesions and technic for their correction is, of course, different from that used by other authorities in the profession whose methods of diagnosis and correction may not be as different as the words they use to describe what they do.

Many will not agree that, "The specific corrective movement is characterized by high velocity and short amplitude of motion. Advantage must be taken of the tissue rebound. This means that the hand that applies the force must do its work and get away quickly. A slow push accomplishes nothing" (p. 265).

His discussion of the "pop" is good:

"The correction of osteopathic lesions is commonly accompanied by a popping noise that is supposed to be due to the sudden separation of the joint surfaces. The occurrence of this noise in no way signifies that the lesion has been corrected; nor does its absence indicate that failure has attended efforts at adjustment. The indiscriminate popping of joints that are not in lesion for the edification of the patient or the satisfaction of the technician is a pernicious practice, likely to do more harm than good. Yet a good many physicians who ought to know better take a childish delight in this accomplishment" (p. 266).

No one can dispute him when he says:

"Osteopathic technic cannot be acquired by a study of books. It must be learned by personal demonstration and application. . . . .

"If a student is shown a series of manipulations designed to correct a lesion without having the principles upon which they are based made clear to him he can do nothing else than blindly copy the movements. He will be unable to improvise those slight variations in technic that different patients and varied circumstances demand. He will do awkward, inefficient work" (p. 269).

The book ends with a chapter on adjuncts in which the doctor says:

"It has been indicated from time to time throughout this text that manipulative therapy is not a panacea. It is by far the most valuable single therapeutic agent, all-sufficient in the vast majority of cases contacted by the general practitioner. Yet there are circumstances under which it may be advisable, or even necessary, to add to it other measures. There are diseases in which manipulative treatment is relatively unimportant, for which other methods of treatment should be partially or completely substituted. There are symptoms with which manipulative therapy is unable to cope. There are conditions which contra-indicate manipulation.

"These admissions in no way imply the failure of the osteopathic concept of disease causation and therapy. This concept was never intended to discredit all other etiologic factors in disease production or supplant all other therapeutic measures. The osteopathic physician should be, and is, a true physician in the broad sense of the word, riding no hobby, possessing a store of knowledge and understanding that enables him adequately to cope with all of the diseases that he contacts except those that rightfully belong in the domain of the specialist. . . . .

"One or another of these or other adjuncts to purely manipulative therapy commonly employed, such as diet, rest and hygienic measures, may in particular diseases or under isolated circumstances be all important in therapy. More often than not one or more of them may be used with advantage to supplement manipulative treatment. Yet, the maintenance of structural integrity remains by far the most important single measure in the preservation of health; and manipulative therapy has a value in the treatment of diseases that is not equaled by the combined forces of all other methods" (pp. 306-311).

This book is not perfect but it is a concise statement in logical form of most of the principles which underlie osteopathic thought. It was evidently written by a teacher for students, but it is by no means elementary. On the contrary, the author does not hesitate to dive into the intricacies of any problem nor to admit ignorance when the recorded proof is not available.

When we say that every practitioner in the profession should read it, it is to be noted that this is a comment rarely seen in any book review in THE JOURNAL.

INDIVIDUALITY OF THE BLOOD IN BIOLOGY AND CLINICAL AND FORENSIC MEDICINE. By Leone Lattes. English Translation. Pp. 413, including bibliography and index, and 71 illustrations. Price $7.50. Oxford University Press, 114 Fifth Ave., New York City, 1932.

This volume deals entirely with the classifications and types of human blood except for occasional references to experimental work. The relations of blood types to the subjects of biology, heredity, clinical medicine and the medicolegal problems are expressed clearly and exhaustively. Technic for such blood examinations is included.—R. R. P.

THE USE OF LIPIODOL IN DIAGNOSIS AND TREATMENT. By J. A. Sicard and J. Forestier. Pp. 235, 50 illustrations. Price $4.00. Oxford University Press, 114 Fifth Ave., New York City, 1932.

A comprehensive survey of the use of iodized oil as a diagnostic aid in conjunction with roentgenological examination, together with recommendations for its use as a therapeutic measure.

The methods of administration of lipiodol in its various uses are clearly portrayed. Typical roentgenograms are used to demonstrate typical findings.

This book should be of greatest value to the internist or x-ray diagnostician.—B. R. P.

ANATOMY OF THE HUMAN ORBIT AND ACCESSORY ORGANS OF VISION. By S. Ernest Whitnell. Pp. 467, including bibliography and index, and 212 illustrations. Second Edition. Price $6.25. Oxford University Press, 114 Fifth Ave., New York City, 1932.

This book contains a wealth of accurate information concerning the orbital contents. It deals almost exclusively with gross anatomy, with emphasis placed upon geographical and functional relationships.

This book should be of greatest value to special students of the eye and there is much information of value to rhinologists.

The reflex nerve mechanics is especially well portrayed and also more comprehensive discussion of the lacrimal apparatus than this reviewer has seen is included. This is not an applied anatomy.—R. R. P.

Conventions and Meetings

Announcements

American Osteopathic Association and allied organizations, Milwaukee, July 24-28, 1933.

American College of Osteopathic Surgeons, Kirksville, Mo., October 3 and 4, 1932, immediately preceding the Celebration of Progress.

Arkansas state convention, Pine Bluff, June, 1933.

California state convention, Oakland, 1933.

District of Columbia convention, Washington, May, 1933.

Eastern States convention, New York City, March 24 and 25, 1933.

Indiana state convention, Indianapolis, October 12 and 13, 1932.

Kansas state convention, Neodesha, November 2 and 3, 1932.

Michigan state convention, Flint, November 1-3, 1932.

Missouri state convention, Kirksville, October 5-8, 1932. Includes celebration of 40th anniversary of the opening of the American School of Osteopathy.

Montana state convention, Glendive, 1933.

New England States convention, Templeton, Mass., October 7 and 8, 1932.

New Mexico state convention, Albuquerque, September, 1933.

New York state convention, New York City, October 22 and 23, 1932.

Tennessee state convention, Ovoca, May, 1933.

Vermont state convention, Rutland, 1932.

CALIFORNIA

East Bay—Oakland

The annual picnic was held at Lake Orinda, August 13. Arrangements for the picnic were made by Etha Hemphill, Berkeley, assisted by Muriel Morgan, and Edward I. Kushner, Oakland. Plans were discussed for entertaining the state association at the convention to be held in Oakland next year.

Los Angeles

The September 12 meeting was held at the college auditorium, with the following program: Glen D. Cayler, "Important Legislative Matters"; George F. Schmelzel, "Relation of Private Physicians to the City Health Department."

Pasadena

The August 23 meeting had James Long as speaker. His subject was the "Acute Abdomen." Those taking part in the round table discussion following were: George Hazeltine, Grant E. Phillips, C. M. Winchell, and Richard A. Schaub.

The September 1 meeting was held at the Pasadena Country club, followed by a golf tournament.

San Francisco

The regular monthly meeting was held August 18, with the East Bay society as guests. A three-reel film produced by George V. Webster and Ralph W. Rice, Los Angeles, of osteopathic manipulative technic, was shown.

COLORADO

State Association

At a business meeting held at the time of the Rocky Mountain Osteopathic Conference officers for the Colorado Osteopathic Association were elected as follows: President, N. E. Atterbury, Denver; vice president, Rodney Wren, Pueblo; secretary, C. R. Starks, Denver; trustees, George Wilke, Fort Collins, Fred E. Johnson, Colorado Springs, Freeda L. Kellogg, Denver, and M. C. Handley, Longmont.

IDAHO

Boise Valley

D. W. Hughes, Boise, secretary, reports that the August 18 meeting was held at Nampa, following a picnic, at the home of O. R. and Mrs. Meredith. F. H. Thurston, Boise, gave an interesting case history for discussion. Legislative affairs were discussed.

ILLINOIS

Chicago

M. C. Beilke, secretary, reports that the first meeting of the season was held September 1 at the Press club. Following a dinner, Don W. Craske spoke on "Common Phases of Hyperthyroidism."

Chicago—West Suburban

The first fall dinner meeting of the West Suburban Osteopathic society was held at Sandwich, at the home of W. F. and Mrs. Murray. The professional program included: Report of A.O.A. Convention, Ray G. Hulburt and C. N. Clark, Oak Park; Report of Osteopathic Free Children's Clinic at the State Fair in Springfield, Byron W. Gutheil, Oak Park, and R. N. Evans, La Grange; Case Report, Dr. Evans; Demonstration of Foot Technic, H. B. Raymond, Hinsdale.

Third District

Nellie Fitch, Bushnell, secretary, reports that the September 8 meeting was held at her city. H. H. Halladay, Galesburg, spoke on the use of the x-ray in diagnosis, illustrating his lecture with interesting films. The next meeting will be held at Aledo, November 3, with Ralph H. Moore as host.

INDIANA

St. Joseph Valley

An outing was scheduled for September 17 at the La Porte Country club, including fishing, golfing, followed by a dinner-meeting.

IOWA

Dallas County

The annual meeting was held in the offices of D. E. Hannan, Perry, August 21. Interesting clinics were held. Officers for the ensuing year were elected as follows: President, Dr. Hannan; vice president, M. E. Andrews, Perry; secretary, Laura Miller, Adel; treasurer, G. B. Nazarene, Dallas Center. The next meeting will be held December 4, at Adel.

Sioux City

A luncheon-meeting was held August 4 at the West hotel. The September 7 meeting included an election of officers as follows: President, R. B. Gilmour; vice president, D. C. Giehm; secretary, George A. Scott; treasurer, W. C. Gordon.

KANSAS

Arkansas Valley

The August 25 meeting was held at the offices of Paul R. Jones, Greensburg. Following a dinner, Thomas B. Powell, Larned, presented case reports of rectal diseases.

Central Kansas

A meeting was held at Russell August 18. Following a dinner the principal address was given by Thomas B. Powell, Larned, state president.

Southwest Kansas

F. C. Tabler, Garden City, secretary, reports that a meeting was held in his offices August 23. The program was as follows: A. B. Slater, Lakin, "Head Injuries"; H. S. Claypool, Syracuse, "Practical Helps in General Practice." Both papers were followed by a round table discussion.

The next meeting will be held September 29 at Dodge City, in conjunction with the Arkansas Valley society.

North Central Kansas—Southern Nebraska

The July 14 meeting was held at Hebron, with J. R. Bancroft, and R. H. DeWitt, in charge. T. O. Pierce, St. Joseph, Mo., spoke on "The Acute Abdomen."

Southern Kansas

K. A. Bush, Harper, secretary, reports that a meeting was held September 13 at J. G. Jewett's hospital, Kiowa, with the following program: L. W. Mitchell, Anthony, "Indications for Cesarian Section"; J. B. Donley, Kingman, "Abnormalities of Pregnancy"; Dr. Bush, "Friedman's Urine Test for Pregnancy."

The next meeting will be held at Anthony.

Topeka

The first fall meeting was held September 1. F. M. Godfrey gave a report on the Detroit convention, and D. A. Bragg talked on the "Modern Trend of the Profession."

MICHIGAN

State Association

John H. Laird, Jr., Flint, chairman program committee, reports that plans are well in hand for the holding of the state convention at Flint, November 1-3. A proposed public program will schedule W. M. Pearson, Cleveland, and A. G. Hildreth, Macon, Mo., as speakers. "Dan's Decision" will be shown.

MIDDLE ATLANTIC STATES ASSOCIATION

The convention of the Middle Atlantic States Osteopathic Association is held September 30 and October 1, at Raleigh, N. C., too late to be reported in this number of THE JOURNAL.

MISSOURI

State Association and Kirksville Pageant of Osteopathy

Plans are rapidly taking shape for the week of conventions and the Celebration of Progress to be held at Kirksville, October 3-7. The American College of Osteopathic Surgeons will meet October 3-4. The Missouri state convention will be held October 5-7. The Pageant of Osteopathy celebrating the 40th anniversary of the opening of the American School of Osteopathy will be presented on the evenings of the 5th and 6th. The tentative program of the state convention is as follows:

WEDNESDAY

Morning

Formal Program.....E. C. Pickler, Minneapolis; G. W. Riley, New York City; W. A. Streeter, London; Q. L. Drennan, St. Louis; R. C. McCaughan, Chicago

Afternoon

President's Address.....Dr. Drennan
Round Table Discussion.
Modern Trends in Osteopathy.....G. M. Laughlin, Kirksville; J. M. Peach, Kansas City; R. N. MacBain, Chicago; L. van H. Gerdine, Los Angeles; C. W. Johnson, Des Moines; E. C. Holden, Philadelphia.

Evening

Pageant of Osteopathy.

THURSDAY

Morning

Displacement Methods in the Treatment of Acute and Chronic Sinusitis with Clinic Demonstrations
James D. Edwards, St. Louis
Cataracts.....A. C. Hardy, Kirksville
Thyroid Gland.....O. G. Weed, St. Joseph, Mo.
X-Ray Diagnosis.....Earl Laughlin, Jr., Kirksville
Subject to be announced..Frederick J. Meyer, Clayton, Mo.

Afternoon

Subject to be announced.....Ottis L. Dickey, Joplin, Mo.
Classification of Common Heart Diseases
A. D. Becker, Kirksville
Know the Alimentary Tract.....D. A. Squires, Fulton, Mo.
Barbecue-Banquet at Still-Hildreth Sanitarium, Macon.

Evening

Pageant of Osteopathy.

FRIDAY

Morning

Osteopathy in Puerperal Sepsis
Margaret H. Jones, Kansas City
Dermatology.....J. H. Denby, Kirksville
The Use of Sugar and Salt in General Practice
George J. Conley, Kansas City
The Osteopath as a General Practitioner
F. C. Hopkins, Hannibal, Mo.
Subject to be announced.....R. W. Van Wyngarden

Afternoon

Business Meeting.

Buchanan County

The weekly meetings for August held at St. Joseph are as follows: Aug. 10, E. D. Holme, "Pneumonia and Influenza"; Aug. 17, F. P. Walker, "Surgical Diagnosis as Practiced by Osteopaths"; Aug. 31, H. N. Topson, "Colloidal Gold in Treatment of Cancer."

Central Missouri

A meeting was held at Columbia, August 24. The meeting was held at the Hardy clinic, followed by a dinner at the Tiger hotel.

Northeast Missouri

The August 11 meeting was held at Shelbyville. The principal speakers were the following: Charles E. Still, George M. Laughlin, and A. C. Hardy, Kirksville. Special musical numbers were given by the children of G. C. and Mrs. Sayre, Shelbyville. Dr. Sayre took care of the arrangements for the meeting.

The September 8 meeting was held at Palmyra. An interesting program followed a dinner which was served at the First Baptist church. E. E. Hartwell, Palmyra, was in charge of the meeting.

Northwest Missouri

The first meeting of the season was held at Maysville, September 8. Following a banquet, the meeting was addressed by George M. Laughlin, H. G. Swanson, Arthur D. Becker, and H. E. Litton, Kirksville. George J. Conley, and J. A. Fogarty, Kansas City, M. L. Hartwell, T. O. Pierce, and F. P. Walker, St. Joseph. R. R. Reynolds, secretary, and L. D. Tibbles, Maysville, were in charge of the meeting.

MONTANA

State Association

The thirty-second annual convention of the Montana Osteopathic Association was held at Columbus, September 5 and 6. It was featured by an excellent program, some of the speakers and subjects of which were reported in the September JOURNAL (p. 36). Other speakers included in the program were: Rev. W. C. Lassater, and Mayor C. H. Swanson, Columbus; C. W. Starr, Billings; Mr. Robert F. G. Giddens, Helena; H. G. Sanderford, Billings; F. L. Anderson, Miles City; Daisy D. Rieger, Billings; S. E. Curran, Lewistown; George Payne and Mabel Payne, Columbus.

Officers for the coming year were elected as follows: President Mabel Payne, Columbus; vice president, W. E. Dean, Bozeman; secretary-treasurer, W. C. Dawes, Bozeman; trustee for three-year term and delegate to Milwaukee convention, Asa Willard, Missoula.

The next convention will be held at Glendive.

NEBRASKA

State Association

The Nebraska Osteopathic Association met at Lincoln, September 26-28, too late for a report in this issue of THE JOURNAL.

NEW JERSEY

State Association

The first meeting of the season was scheduled to be at Newark, September 17, with the following speakers: Edward G. Drew, Philadelphia, "Diagnosis of Pelvis Conditions"; O. J. Snyder, Philadelphia, "Necessity for Adequate Legislation."

NEW MEXICO

State Association

H. S. Rouse, Roswell, reports that the New Mexico Osteopathic Association held its annual convention at Santa Fe, September 5 and 6. The following speakers were included in the program: Edward S. Merrill, Los Angeles, "Epilepsy, Syphilis (thermogenic treatment of), Dispersibility of Colloids of the Nerve Cells with Osteopathic Considerations"; J. Francis Brown, Amarillo, Tex., "Electrocoagulation." H. E. Donovan, Raton, "Obstetrics and Gynecology". A banquet was served September 5 for the members and their friends.

Officers for the coming year were elected as follows: President, L. M. Pearsall, Albuquerque; vice president, Margaret C. Brewington, Albuquerque; secretary-treasurer, Dr. Rouse; trustees, Dr. Donovan, Caroline C. McCune, Santa Fe, and C. H. Conner, Albuquerque; legislation and membership, Dr. McCune; clinics and statistics, Dr. Donovan; publicity and education, Dr. Rouse, and S. Mable Skeels, Albuquerque; public health, Dr. McCune; delegate to Milwaukee convention, Dr. Donovan, and alternate, Dr. McCune.

The next convention will be held at Albuquerque.

NEW YORK

State Association

The following program is scheduled for the New York state convention at New York City, October 21 and 22: W. A. Schwab, Chicago, "Backache and Short Leg"; R. H. Williams, Rochester, "Posture"; E. R. Kraus, New York City, "Interesting Cases and Interesting Mistakes in Osteopathic Practice from X-ray Standpoint." W. J. Deason, Wichita, "Thermogenic Treatment of Disease" and "Recent Osteopathic Results"; O. F. Martin, Boston, "Treatment of Infantile Paralysis"; W. M. Pearson, Cleveland, "Treatment of Acute Infections" and "Osteopathic Interpretation of the Endocrine Glands"; F. C. True, Philadelphia, "Emergencies of General Practice"; H. V. Hillman, New York City, "Proctology for the General Practitioner"; C. P. McConnell, Chicago, "Philosophy of Osteopathy"; W. H. Hay, M.D., East Aurora, "Health and Diet."

New York City

The September 22 meeting was scheduled to have the following program: H. Walter Evans, Philadelphia, "Prenatal and Postnatal Care" with discussion by Helen M. Dunning, and J. B. M. Arthur, New York City. A business session was to follow.

OHIO

Akron District

The September 7 meeting was held at Alliance. During the afternoon, F. M. Hulett, Columbus, conducted a clinic in the offices of J. P. Flynn. A dinner in the evening was followed by a discussion of congenital dislocations. The discussion was supplemented by the showing of moving pictures and roentgenograms.

Central Ohio

Edgar Q. Lamb, Columbus, secretary, reports that the regular monthly meeting was held September 8, at Columbus. J. E. Wiemers, Marietta, spoke on "Diseases of Children." Legislative problems were discussed.

The next meeting will be held October 6 at Lancaster.

Cleveland District

C. A. Purdum, secretary, reports that the regular monthly meeting was held August 31 at the Columbia Hills Country club. The dinner was followed by a dance instead of the customary speaker. The Akron District society was invited and was well represented. Weekly luncheons are being held at the Hotel Carter.

The September 12 meeting had scheduled a discussion on "Endocrinology and Its Relation to Osteopathy."

Ohio Valley

The quarterly meeting was held September 1, at Chester, W. Va. An illustrated lecture was given by W. D. Jamison, Grove City, Pa. A dinner was served with F. E. and Evelyn Ramsey as host and hostess.

OKLAHOMA

Kay County

A meeting was held September 8 at Blackwell. Following a dinner, a business session was held. W. A. Laird, Ponca City, was in charge of the program. W. W. Palmer, Blackwell, president, was in charge of the business meeting. C. D. Ball, state president, Blackwell, gave a report of a recent state trustee meeting at Oklahoma City, and P. W. Gibson, Winfield, Kan., trustee, A. O. A., gave a report of the Detroit convention.

RHODE ISLAND

State Association

The September 8 meeting was addressed by Frederick S. Dannin, Newport. He spoke on "Osteopathy in Newport County, Its Clinical Activities and Means of Educating the Public."

ROCKY MOUNTAIN OSTEOPATHIC CONFERENCE

The annual Rocky Mountain Osteopathic Conference was held at the Rocky Mountain Osteopathic Hospital, Denver, August 22-25. The conference was well attended and proved to be a success in every way. Visitors and delegates came from far. The speakers included the following: Edward S. Merrill, Los Angeles; Russell R. Peckham, Chicago; Fiori A. Parisi, Des Moines; Arthur D. Becker, Kirksville, Mo.; N. E. Atterbury, Denver.

TENNESSEE

State Association

George A. Bradiute, Knoxville, secretary, reports that the Tennessee Osteopathic Association held its annual convention at Gatlinburg, September 3-5. The meeting was well attended and marked by the presence of many visitors from other states. C. L. Baker, Memphis, past president, presided. O. Y. Yowell, Chattanooga, trustee, A. O. A., reported on the Detroit convention. The program also included the following speakers: B. D. Turman, Richmond, Va.; T. M. Rowlett, Concord, N. C.; S. O. Holland, Salisbury, N. C.; Hoyt B. Trimble, M. W. Henderson and Elizabeth L. Broach, Atlanta, Ga.; Kate T. Callahan, South Bend, Ind.; R. C. Hart, O. T. Buffalow and Charles M. Owens, Chattanooga; Dr. Bradfute, W. F. Link and R. Lee Miller, Knoxville; E. C. Ray, J. R. Shackleton, Sr., J. R. Shackleton, Jr., A. J. Harris and Sonora L. Whiteside, Nashville; G. W. Stevenson, Springfield; R. L. Park, Trenton; Willie Mayo Schoonmaker, Jackson; W. S. McClain, Cookeville; Richard Boyd, Tullahoma; J. S. Blankenship, Murfreesboro; V. H. Price, Covington; Rose A. Meade, Memphis, and Harold W. Roberts, Morristown.

New officers for the coming year were elected as follows: President, Dr. Hart; vice president for the Eastern division, H. D. Roberts; vice president for the Middle division, Dr. Stevenson; vice president for the Western division, Walter L. Baker, Memphis; secretary, Dr. Bradfute.

A resolution was passed expressing appreciation for the loyal services given by Dr. Shackleford, Sr., who has been secretary-treasurer for many years.

The next meeting will be held at Ovoca, May, 1933.

TEXAS

State Association

A meeting was held August 27 at the home of Charles F. Kenney, Fort Worth. Prospective students of osteopathy were present and listened to addresses by the following: A. D. Ray, Cleburne; Louis Logan, Dallas; R. R. Norwood, Mineral Wells; Misses Delight Scothorn and Mary G. Bedwell, Dallas; Miss Emilie Kenney, Fort Worth. H. M. Walker, Fort Worth, was chairman.

Central Texas

A meeting of the executive committee was held at Waco, August 20. Plans were made for a state association meeting to be held at Fort Worth, August 27.

Lower Rio Grande Valley

An outing was held August 14 at the Boca Chico beach.

VERMONT

State Association

Kathleen A. Hunt, Middlebury, secretary, reports that the convention of the Vermont Osteopathic Association will be held at Rutland, October 19 and 20.

WESTERN OSTEOPATHIC ASSOCIATION

Officers for 1932-1933 are given by C. B. Rowlingson, Los Angeles, secretary, as follows: President, B. W. Clayton, Salt Lake City; vice president, S. M. Pugh, Everett, Wash.; secretary-treasurer, Dr. Rowlingson.

WASHINGTON

State Association

An informal gathering was held at Yakima Park, August 13 and 14. Hikes to interesting places in the park took place.

Walla Walla

An election of officers was held at the August 30 meeting as follows: President, R. C. Mayo; secretary, C. E. Abegglen. Two social meetings and one business meeting will be held each month.

WISCONSIN

State Association

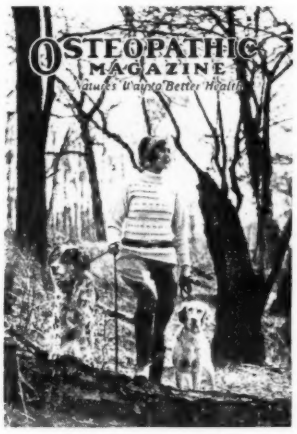
A picnic was recently held. It was well attended and enjoyed by all. The A. O. A. national convention committee is fully organized and already at work to make a success of the Milwaukee convention, July 24-28, 1933.

CANADA

Ontario Study Group

Edgar D. Heist, Kitchener, in charge of programs, reports that a meeting was held September 7, at the offices of Drs. Jaquith, Toronto. New methods of technic were demonstrated.

The next meeting was scheduled for September 28.



OSTEOPATHIC MAGAZINE
FOR OCTOBER

A Paradox

were I required to define it, is a dolt who throws a Douglas shoe at his Big Ben, rolls off his Ostermoor onto a Congoleum rug, jumps into his B. V. D.'s, runs his Gillette quickly over his Mennen-lathered face, eats a hurried breakfast of Shredded Wheat and Postum, lights up a Chesterfield on his way to the office, and there, later on in the day, dismisses an advertising solicitor with the sharp remark: "Advertising don't pay. It never sold me nothin'!"

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Osteopathic Health

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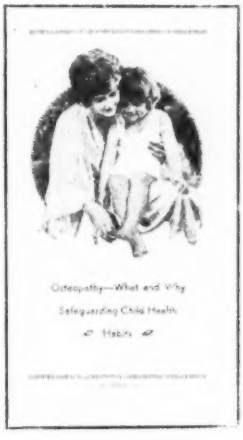
OSTEOPATHY: WHAT AND WHY—SAFEGUARDING CHILD HEALTH.

Prices and order blank in October Forum



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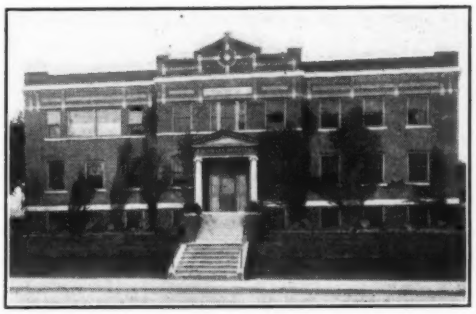

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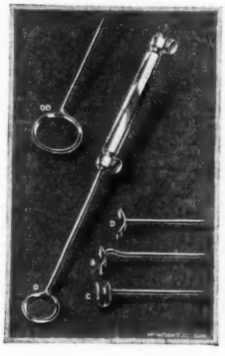

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German, Arthur W., 932 Cumberland St., Lebanon.
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Almgren, Marian A., from Lafayette, Ind., to 16-18 Monroe Ave., Grand Rapids, Mich.
Attwood, Ada., from Watertown, Mass., to Highland St., Holden, Mass.
Axtell, Byron I., from 303 W. Hickland Ave., to Stanley Bldg., Princeton, Mo.
Baker, Fred D., from 67 Park Ave., to 22 W. 40th St., New York City.
Bastedo, George C., from Detroit, Mich., to 2720 W. Jefferson St., Trenton, Mich.
Beall, Francis J., Jr., from 9 Brattle Road, to 604 Gurney Bldg., Syracuse, N. Y.
Beville, Charles L., from General Delivery, to 2 E. 39th St., Kansas City, Mo.
Border, Sam I., from Spokane, Wash., to Bozeman, Mont.
Bush, Evelyn R., from 704 Weissinger-Gaulbert Apts., to 2438 Ransdell Ave., Louisville, Ky.
Bush, Kirkland A., from Thompson Bldg., to Bush Hospital, Harper, Kan.
Callahan, Kate T., from Knoxville, Tenn., to 803 J. M. S. Bldg., South Bend, Ind.
Cook, G. Flavel, from 9A Cavendish Square, to 82, Cadogen Square, London W.1, England.
Cooper, Emma S., from Kansas City, Mo., to 4193 Walnut St., Riverside, Calif.
Corwin, S. Gilbert, from 16 Noxon St., to 103 Market St., Poughkeepsie, N. Y.
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Davis, H. H., from Andover, N. J., to 138 Belvidere Ave., Washington, N. J.

Dayton, Frank E., from Orr Block, to 534 Park Ave., Manistique, Mich.

Decker, Ernest B., from Kirksville, Mo., to 1110 S. Main St., Goshen, Ind.

Devine, H. W., from 211-212 Welder Bldg., to 414-16 Welder Bldg., Victria, Tex.

Dobeleit, R. F., from 635 Industries Bldg., to 136 W. Second St., Dayton, Ohio.

Dorn, Norman H., from Tacoma, Wash., to 1700 Textile Tower, Seattle.

Dorwart, R. E., from Fort Collins, Colo., to Box 57, Norcatur, Kan.

Drew, Edward G., from 1408 Spruce St., to 135 S. 17th St., Philadelphia.

Foote, Harvey, from 40A Park Lane, to 33, Hertford St., Park Lane, London W.1, England.

Foster, C. C., from Cleveland, to 14413 Detroit Ave., Lakewood, Ohio.

Foley, H. P., from Hemet, Calif., to 1036 Ohio Ave., Long Beach, Calif.

Frey, I. Gordon, from Columbus, Ohio, to Plymouth, Wis.

Gorham, H. Wesley, from 18 Lynes Place, to 25 Frost Bldg., Norwalk, Conn.

Grant, Robert W., from Acacia House, to 407 S. Franklin St., Kirksville, Mo.

Gregory, C. F., from O'Neill Bldg., to 205 W. Broadway, Webb City, Mo.

Green, E. Carlton, from 3 Whitney Ave., to 67 Yonge St., Toronto, Ont., Canada.

Griffin, Frederick A., from 830 Transamerica Bldg., to 829 Transamerica Bldg., Los Angeles.

Gross, Olga H., from 20 Main St., to 18 Main St., Pittsfield, Me.

Holcomb, W. LeVerne, from 242 Bryant St., to 353 Elmwood Ave., Buffalo.

Holloway, James L., from Oklahoma City, to 3817 Gillon Ave., Dallas, Texas.

Humphries, Ruth E., is at 681 Main St., Waltham, Mass., and not at Campton, N. H., as was stated in the July issue of THE JOURNAL.

Knowles, William T., from 229 Berkeley St., to 56 Commonwealth Ave., Boston.

Koogler, Paul R., from Lima, Ohio, to Hustisford, Wis.

Kruse, Charles A., from Bellefontaine, Ohio, to 454-60 Ohio Bldg., Sidney, Ohio.

Hacke, Virgil, from Carlinville, Ill., to Wagner, Okla.

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Landgrebe, W. H., Jr., from Lakewood, Ohio, to Mount Fair Hospital, Cleveland.

Lathrop, R. W., from 105 Summit Ave., to 357 Standard Life Bldg., Decatur, Ill.

Leeds, Alvah H., from 4 Hudson St., to 20 S. Broadway, Yonkers, N. Y.

Leonard, Harry M., from 1931 N. Fifth St., to 1336 N. Second St., Harrisburg, Pa.

Lewis, Tom R., from New Castle, Pa., to 107A Main St., Monroe City, Mo.

Liffring, L. A., from Second Natl. Bank Bldg., to 428 Security Bank Bldg., Toledo, Ohio.

MacFadden, Charles, from Franklin Apts., to 205 Market St., E., Johnson City, Tenn.

MacLean, A. L., from Boston, to 430 Common St., Belmont, Mass.

Martin, Charles C., from 219 W. Seventh St., to 2025 Seventh Ave., Los Angeles.

Martin, Ruth E. Doan, from Los Angeles, to 2706 School St., Oakland, Calif.

Maybee, Mildred, from New York, to Birchmonte, North Conway, N. H.

McCreary, Angela M., from 1002 W. O. W. Bldg., to 1026 W. O. W. Bldg., Omaha, Neb.

McGowen, Helen L., from 308 E. Main St., to Cor. Fifth & Sycamore Sts., Greenville, Ohio.

McKinistry, A. Clinton, from 1818 Madison Road, to 3329 Montgomery Road, Cincinnati.

Overton, Melvin M., from 5468 Woodlawn Ave., to 6634 Greenwood Ave., Chicago.

Pearson, Ethel B., from Hammond, Ind., to 1001 Huron Road, Cleveland.

Pearson, Wallace M., from Hammond, Ind., to 1001 Huron Road, Cleveland.

Peckham, Russel R., from 1369 Hyde Park Blvd., to Hyde Park-Kenwood Natl. Bank Bldg., 1525 E. 53rd St., Chicago.

Pinkston, Paul E., from 710 W. 43rd St., to 415 Bryant Bldg., Eleventh & Grand Ave., Kansas City, Mo.

Pulliam, Crafton B., from 8538 Jos. Campau, to 12157 Jos. Campau, Detroit.

Quartel, H. Ward, from Reibold Bldg., to 608 Mutual Home Bldg., Dayton, Ohio.

Redman, M. L., from 405 Black Bldg., to 606 Black Bldg., Fargo, N. D.

Reid, J. H., from Rochester, N. Y., to 481 Cumberland Ave., Portland, Me.

Rench, Leonard R., from 1001 Huron Road, to 1004 The Guardian Bldg., Cleveland.

Rogers, K. B., from LeMars, Ia., to Britt, Ia.

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(Continued on page 36)

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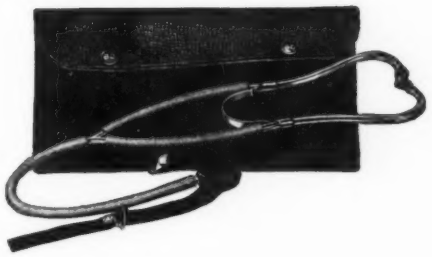

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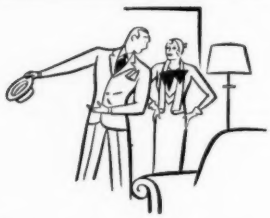

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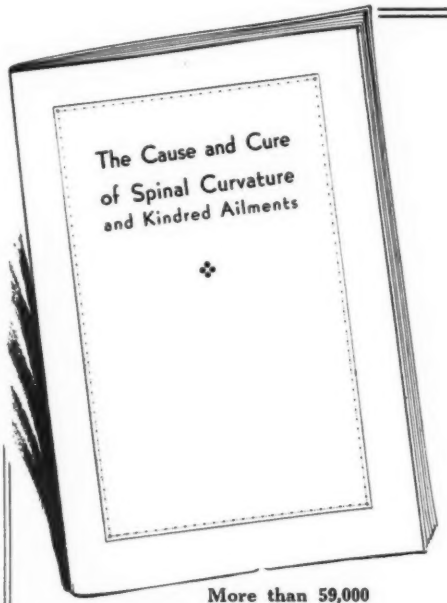

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